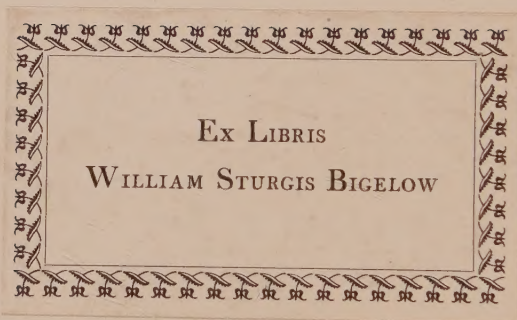


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The Gorham Press

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In view of the great importance of the contributions of eminent specialists in psychology which have been published in *The Journal of Abnormal Psychology*, and the increasing demand for the same, the publisher has been encouraged to re-issue the numbers which are in print in this two-volume set, in order that this valuable material may be more accessible to the general reader. The first series contains the articles published in the issues of the magazine from April, 1910, to March, 1911, inclusive, and the second series those published from April, 1911, to March, 1912, inclusive.

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APRIL-MAY, 1911

PSYCHOTHERAPY AND RE-EDUCATION

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AFTER a word has been current coin for a period of time, it sometimes serves a useful purpose to take account of stock, as it were, and to attempt to clarify its meaning. This is especially true of psychotherapy for such words as this, terms of wide and vague comprehension, stand always in need of delimitation. Much that is written in praise of psychotherapy as well as much that is written against it, loses its point, or perhaps I should say, possesses no point, because of a certain looseness of thought and expression. Of what special value is the judgment that psychotherapy is or is not destined to a future full of promise unless we are quite at one with the critic as to the precise significance of the term? In the present paper I desire to take a rather rapid survey of the subject, with the idea of determining, if possible, the fundamental purpose of all psychotherapy.

Translated into our mother tongue, psychotherapy becomes simply mind-cure. And if this is so, the possibilities in the way of meaning are reduced practically to three: first, cure of the mind; second, cure by or through the mind; and third, cure of the mind by or through the mind. Psychotherapy may mean any or all of these things; but whichever it means, the important fact emerges that psychotherapy is not a *thing*, in the sense that any physical object is a thing. If, then, psychotherapy is not a thing, it must be either that which we call the attribute or property of a thing or else it must be a number of things. The latter is

precisely what it is — a number of things. Psychotherapy is just a convenient general or class name for a number of things, namely, certain methods, procedures, or devices which have been grouped together because they possess some characteristics in common, and have been found useful in the study and the treatment of different kinds of nervous disorders, which present more or less close analogies to one another.

From this viewpoint it ought not to be difficult to see that psychotherapy means *methods*, and accordingly it can have no definite, clear-cut boundaries. Its borders may be enlarged or contracted, as suits our pleasure. What we include to-day in the psychotherapeutic armory we may take it into our heads to exclude to-morrow; and again, as our experience becomes broader and ever more rich and multifarious, we shall, no doubt, extend the limits of psychotherapy to include methods as yet unknown. Men have made these methods of treatment and men may, indeed they do, alter them or unmake them, if so they wish.

Now when we have apprehended that psychotherapy means nothing but methods whereby we may bring about a cure of the mind, by or through the mind, we not unnaturally inquire what is the ultimate purpose that these methods subserve. This purpose may be stated in one word — re-education. To meditate between theory and life is the highest privilege, as well as the most difficult and perplexing task of the psychotherapist. Whatever the proximate object of his endeavor, the fundamental aim of his labor is and must always continue to be, to make the theories of science bear fruit in life and conduct. Every psychotherapeutic procedure, of whatever sort, has in view this definite end — to bring about a readjustment, some sought-for and desirable reorganization of the individual in respect of his inner and outer experience; to assist him as well as may be, in his efforts, hitherto frustrated, toward the consummation of a more harmonious adaptation to his social and physical environment,—in a word, to place at his disposal those principles of modern psychology which, rightly used, will not improbably facilitate and further his psychic re-education. The situation is in nowise different from that

which confronts the teacher of normal minds, except in this, that the psychotherapist is, as a rule, engaged upon problems whose solutions are freighted with an immediate and greater moiety of happiness and misery.

One occasionally hears it said and upon reading some of the literature may by implication gather the impression, that the business of psychotherapy consists, for the most part, in the use of suggestion in hypnosis, of persuasion and similar modes of treatment. There is truth, of course, in this; but to adopt such an opinion as an ultimate philosophy of psychotherapy is to take a very narrow view of the subject, for it does but add yet another example to the already long list of means mistaken for ends. Like the artist who uses his oils and brushes, now after one fashion, now after another, to create different effects upon his canvas, the psychotherapist, working in a more intangible, though vastly more plastic medium, utilizes his divers methods to work the desired effects upon personality. These effects, it should be remembered, are and of necessity must be, various kinds of psychic re-education, since it must be obvious that no physician hypnotizes for the mere sake of hypnotizing, nor again does he suggest or persuade for the mere sake of suggesting or persuading. From all of which it results that no amount of refinement in diagnosis, no delicacy or intricacy in methods of treatment, can justify its demand upon our attention at all, unless it can show its right to do so by contributing something, directly or indirectly, to this educational effort. And on the other hand anything, whatever ancestry it may boast or be ashamed of, which can further this movement toward a higher educational efficiency, should be a welcome recruit to psychotherapy.

When we have assented to this liberal, and I venture to believe, logical creed, it becomes plain that lengthy and perhaps not altogether illuminating controversy about the relative rights, values, and domains of hypnosis, hypnoidization, suggestion, persuasion, and so forth, becomes unnecessary. It is much as though an artisan, in a spirit of exclusiveness, should contend for the superiority of one special tool, when in point of fact, every implement in his tool-chest is superior to every other for some one piece of

work. In its last analysis, the utility of any method must depend upon what you want to do with it; it cannot be judged *a priori*, for its success or failure must be estimated practically from its consequences. Many methods may be in some measure efficient (or inefficient) in bringing about any desired result.

Re-education, then, I conceive, is the *summum bonum* of psychotherapy. Now when you set out to re-educate a man you state in the very word you use that he is already the possessor of some sort of education. Moreover, you further imply that it is an education which is not satisfactory, one which for some reason you desire to change. The more closely we study nervous people, the more attentively we seek to penetrate beneath the mask of convention that conceals them, the more surely are we impelled to the conclusion that, in very large part, the acute suffering as well as the chronic misery which goes by the name of nervousness is ultimately traceable to faulty education, taking education in its broadest and truest sense, as co-extensive with the sum total of formative influences in each individual's life. Nothing happens to us amiss; there is no such thing as non-significant experience. Every bit of experience, the seemingly most insignificant quite as much as the tragically significant, becomes for us an educational force, whether for good or for ill must depend upon its nature and upon our personal handling of it. This is the reason that the boy is literally father to the man. None of us, strictly speaking, has any real past, because the past lives on in the present; for, as M. Henri Bergson so truly says, life is creative evolution; it carries its past with it and is forever creating its future. Our beliefs, true or false, and our conduct which they activate, are growths rather than deductions; and it is precisely in directing or redirecting this growth of belief, this living process of individual evolution, that psychotherapy finds the sphere of its highest usefulness. Not merely to eradicate the superficial disturbances which sometimes disappear with deceiving facility, but to guide the development of mind, to help toward self-realization and self-perfection — that, surely, is a worthy labor in the service of a noble end. And if bad education, whose outward manifestation is many

times called nervous disease, has led to contradictions and frustrations in thought, in conduct, and in feeling, right education may, at least, help to restore some measure of harmony. To remove the present conflict, but also what is of equal, indeed even of greater importance, to prevent the occurrence of future conflicts is the business of psychotherapy; prophylaxis should be its watchword.

Every experience that comes to us must be somehow absorbed and assimilated into the stream of our conscious personality. Synthesis is a prerequisite of healthy life, mental no less than physical. We must, if we would maintain our normal psychic stability, be able to dispose of experiences practically. But sometimes we are unable, and not infrequently we are even unwilling, to do so; our experiences are too much for us; and it is just these unassimilated bits of experience, these psychic parasites that demand the attention of the psychotherapist and exercise his skill and patience.

If, therefore, it seems reasonable to accept the opinion that re-education is of the very pith and marrow of psychotherapy, it follows that before we can re-educate we must be dealing with a mind that is capable of responding to it. In practice I have come to believe that in a broad sense there are three classes of people. Some there are in whose minds not much of anything goes on from morning till night; they will not require psychotherapy. There are others, a not inconsiderable aggregate, whose chief purpose in the world seems to be to immortalize a mood or to propagate an emotion; they will not seek psychotherapy, or if they do, they will simply annex it to their mood or their emotion and thus dispose of it. Again, there are still others, happily the vast multitude, who are striving with all their might to bring their lives to some sort of successful issue; they will welcome psychotherapy because they wish to escape from the meshes of the net in which ignorance or fault or misfortune has entangled them. Not every one, therefore, is capable of profiting by psychotherapy or worth the time and the trouble it requires to apply it. Here no more than elsewhere can one gather grapes of thorns or figs of thistles. Possibly some of the failures in this matter of mind cure have

been due chiefly to the fact that there was not a suitable mind to cure. A certain intelligent and enthusiastic co-operation on the part of the patient is necessary to success; passive treatment, which in our Ovidian age seems to be much in demand, is foredoomed to failure. How often are we requested by patients to give them something that will cure them, and with what looks of surprise are we greeted when we reply that the cure lies largely within themselves. From all of which it follows that a somewhat nice discrimination is required in the selection of suitable cases for psychotherapeutic treatment.

Let us, however, assume, that we have satisfied ourselves that a particular individual is a proper person for psychic re-education: how shall we begin? Well, in the first place, let us not begin too precipitately: he will absorb our explanations and our advice and suggestions much more easily, with greater advantage to himself and satisfaction to us, if we do not thrust our re-education upon him; swamp him, as it were, with a very deluge of affirmations and denials. To orient ourselves within the mind of the patient, to find our way about there, is our preliminary duty; and this is the place to begin the use of that psychological imagination which every psychotherapist should endeavor to cultivate. The best method is undoubtedly to encourage the patient to tell his story in his own way, with just so much of direction from the physician as will prevent the introduction of too many irrelevancies and trivialities of detail. In this way one gets hold of the raw material upon which psychotherapy has to operate, and at the same time receives some valuable sidelights upon the perspective and relative emphasis that things have assumed in the patient's mind. Furthermore, the respectful attention which the physician lends to this initial confession is sure to be rewarded in the future with confidences more intimate and important. And as things stand in abnormal psychology to-day, these confidences are of paramount value, not only in assisting diagnosis, but in determining the kind of treatment, for there are many factors in each one's personal history as important in significance as in their true relations they are difficult to obtain.

A very limited experience will suffice to impress upon the psychotherapist that he has in the main to deal with two disparate sets of phenomena: first, the symptoms in so far as they are present directly to the patient's consciousness; and second, the interpretation which the patient inevitably places upon these symptoms. The former are, of course, the immediate facts in the case, the latter an attempt to give them a meaning. And were it possible to sunder things so intimately united as facts and their meanings, I should not hesitate to say that the actual pains and aches and discomforts, great as they are, which nervous people endure, cause a less appreciable amount of suffering than the meanings which they assume these aches and pains and discomforts to convey.

Fear and its offspring, introspection, are the evil geniuses of nervous people. It is not the loss of memory in itself, but the approaching insanity that they believe it to announce, of which they are afraid; not the pain in the back, but the Bright's disease which it is thought to forebode; not the tingling and numbness in the legs, but the impending locomotor ataxia; not the indigestion, but the cancer with which they believe this to be associated. In the presence of fears such as these and a thousand like them, psychotherapy reaps, perhaps, its most fruitful harvest of re-education. Where so much is curious, the most curious thing about it all is that, as a rule, the average patient will not immediately or spontaneously disclose the existence of this gnawing fear. With some effort, and even persistence, you may be compelled to win the reluctant admission from him; and having once obtained it, you will be surprised to hear him tell you that he failed to mention his fears, either because he did not think it necessary or because he did not wish you to confirm his suspicions, or because, perhaps, you might laugh at what you considered to be the absurdity of his apprehensions. It is a rule, with but few exceptions, that this background of fear, more or less pronounced, will be found in every instance, and hence it becomes of the utmost importance to look for it, and, in so far as possible, to remove it.

In such psychic re-education the physician has two

things to communicate: first, proper thoughts about the objects of experience; and second, proper ways of thinking, proper intellectual processes,— this last constituting mental discipline. He imparts to his patient not only objects, as he knows them, but also his ways of thinking and of knowing. In this manner he becomes, in some sort, a teacher. For of what lasting benefit is it to any one to be told merely the true meaning of one isolated fact, of one symptom or series of symptoms, if some knowledge of the processes of right thinking is not inculcated at the same time? By no means do I wish to suggest or to imply that the psychotherapist should constitute himself an instructor in logic; but without going so far as this, it is not altogether unreasonable to ask that he should enlighten his patients in a general way, concerning the great basic principles of psychic life. Thus and thus only will he help to produce some degree of immunity in the future, as well as relief in the present. Elevated to this plane of activity, psychotherapy takes its rightful place among the arts and sciences that are making for the permanent benefit of mankind. Not content with temporary successes, however alluring, the psychotherapist will strive in his small way to contribute something to the upward moral and intellectual movement of which he feels himself to be a part. He will then experience something of the poetry as well as of the prose of medicine.

When this overgrowth of fear has been discovered and removed, or at any rate, brushed aside, we cross the threshold into the patient's real personality. Here, if we are persevering and possessed of some powers of discrimination and intuition, we will unearth many surprising things. But first we will discover what ought not to surprise us at all, that people do not get nervous for the fun of the thing. It is a somewhat superficial view which is condensed in the undoubtedly clever saying, that some folks "enjoy poor health." If they enjoy it, it is not ill health to them, no matter what it may appear to be to those about [them. There is no enjoyment about real ill health; it is a serious and depressing business.

Once inside the portals of personality, and with our eyes still intent upon the obscure and more remote ante-

cedents of things, we see that although we have been told of headaches, insomnia, indigestion, fatigue, and a myriad of other symptoms, we are not yet at the root of the matter. These symptoms are but the smoke that points to a flame, blazing even now, or, more often, long since smouldering in the midst of the ashes it has made. Whatever the nature of the happening, something has gone amiss. Perhaps our patient belongs to the poor. If so, his nervous state may have been induced by the fierce struggle for mere existence, the everlasting labor to earn the bread to feed himself and his wife and children; or his habits may not have been the best and he is now reaping the harvest whose seeds were sowed many years ago. In the higher social levels we meet with the anxieties and disappointments and sorrows that follow upon ambitions frustrated, ideals shattered, hopes and wishes that have come to naught. In every walk of life are the disasters that accompany the relations of the sexes. But whatever the nature of the difficulty may be, whether the outcome of emotional shock, of selfishness, indolence, overactivity, misfortune or fault, the result in its last analysis is much the same,—depression and weariness of spirit.

It will do little good to tell this type of patient that he should not worry; he knows as much himself, and if he doesn't his relatives or his friends have told him so, long before he has reached the physician. They have also told him, in a spirit of genuine sympathy, that he should cease to think so much about himself, or that he ought to take a rest, or become interested in some hobby or in out of door sports. Perhaps they have even lent him books, which he has read with hopeful diligence, about the value of optimism and of cheerfulness and self-control, with well-meaning hints as to the best methods of cultivating these estimable qualities. But in the end it all comes to nothing, and why? Because it is merely touching the fringe of the problem. What this man wants to know is, not that he should cease to worry, which is obvious, but *why* he should cease to worry. And whoever can answer this why—if in truth it can be answered—gets to the root of the matter. Discouraged, weary, pessimistic, the patient comes to the psychotherapist asking,

though he does not know it, for a practicable philosophy of life. His own has broken down, or else he never had anything worth the name and never really felt the need of it until the present crisis brought him sharply to the realization that such a thing is indispensable.

If it is true that physical ills require physical remedies, ethical and spiritual ills require corresponding remedies. I know full well that psychotherapy is usually supposed to be strictly scientific and to offer scientific relief for nervous ailments; but I know also that one may be too scientific and that most people would starve on mere science; not one of them could live on its conclusions. Life overflows the categories of science in every direction, and psychotherapy, it should be remembered, has in some way or another to help men to live. In so far as it refuses or neglects to do this, it will find itself reduced to a collection of sterile formulas, of interest to historians, no doubt, but useless to the man in the street.

From all that has gone before in this too lengthy discussion, we conclude that the kinds of re-education required by individual patients will differ widely. Whereas the simple explanation of the true meaning of a troublesome symptom or group of symptoms will be amply sufficient for one, for another it may be necessary to set about what amounts practically to a complete mental and moral re-adjustment. Hypnosis, suggestion, psychoanalysis, may all be necessary to our purpose. This it is that often makes psychotherapy such a large consumer of time. But in reality nothing less will suffice if the work is to be thoroughly done. Thus the physician may, perhaps, bring it to pass that his patient will acquire what Walter Pater believed it to be the chief function of all higher education to impart, "the art, namely, of so relieving the ideal or poetic traits, the elements of distinction in his everyday life, of so exclusively living in them, that the unadorned remainder of it, the mere drift or débris of his days, comes to be as though it were not."

SOME INSTANCES OF THE INFLUENCE OF DREAMS ON WAKING LIFE

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THE days are long past, at least in civilised countries, when the presages furnished by dreams served as incitements to a given course of action, when the gravest projects, the embarking on momentous campaigns, the making or unmaking of rulers, could be decided upon in consequence of a significant dream. Since the decrease—or, more cautiously put, the transformation—of superstition that the last two or three centuries have brought about, conscious reliance on such presages has become a mark of ignorance, and at the present day is not often met with except in the lower classes. It is probable, however, that in more subtle ways many of our waking processes are affected by preceding dreams to a greater extent than is generally recognised. This particularly applies to the occurrence of certain moods, of foreboding, anxiety, gaiety, and so on, which begin at the moment of waking and frequently last throughout the day; it is often possible to trace these to corresponding affects that dominated the dreams of the preceding night.

In the field of psychopathology similar occurrences may be observed. Féré was, I think, the first to call attention to the fact that hysterical symptoms can sometimes be traced to a given dream,* and I have noted many instances of this. The subject has been touched on, though not properly elucidated, by several writers,† the latest being Waterman.‡ It is quite certain that in these cases the dream has played only a secondary part, by constructing a given mental composition from elements that had at one

*Féré. Note sur un cas de paraplégie hystérique consécutive à un rêve. C. R. Soc. de Biol., Nov., 1886. Nr. 41. A contribution to the pathology of dreams, etc., Brain, 1887. Vol. ix, p. 488.

†See, for instance, de Messières. Les rêves chez les hystériques. Thèse de Bordeaux, 1895.

‡Waterman, Dreams as a Cause of Symptoms, JOURNAL OF ABNORMAL PSYCHOLOGY, October-November, 1910. Vol. v, p. 196.

time been fully conscious;* the most that the dream can do, therefore, is to determine the precise form taken by the symptom in question. I have shown that this also holds true for a certain class of myths and beliefs.†

The following three instances are examples of a course of behaviour being grossly determined by a preceding dream. In the first the incentive was throughout consciously recognised, in the second it was half-consciously recognised, and in the third not at all. Yet in all there was reason to believe that behind the surface motives lay deeper ones that were now unconscious in the fullest sense of the word.‡

The *first* was related to me by a Canadian engineer. At the age of twenty he had interrupted his studies by accepting a lucrative government appointment which involved the surveying of a distant and previously unexplored tract of country. He was away for two or three years, and became so enamoured of the free life in the woods, with only the Red Indians for company, that he was exceedingly loath to go back to town life. One night he had a most unpleasant anxiety dream to the effect that all his family were dead, and throughout the next day was very perturbed at the thought. The same dream recurred in three successive nights, and, although he was in general the very reverse of superstitious, the impression thus made on his mind was so vivid that, in order to reassure himself of his family's safety, he at once went to the nearest post, handed in his resignation, and started for home. Here he found them all well, and they prevailed on him to stay at home and take up his studies again.

The form of the dream, grief at the death of beloved parents, was so very characteristic that one could not avoid grouping it in the class of Freud's typical dreams, i.e., those the interpretation of which is constant in different persons. The natural inference was that the infantile roots of the dream related to repressed and long forgotten

*See A. A. Brill. Dreams and Their Relation to the Neurosis. *New York Med. Journ.*, April 23, 1910.

†Ernest Jones. Der Nachtmar in der Mythologie und in der Geschichte. To appear in 1911.

‡For a definition of this term see Ernest Jones. *Psychol. Bull.*, April, 1910, p. 111.

||Freud. Traumdeutung. 2^e Aufl., 1909, S. 175.

child fancies of antipathy towards the parents, and that these had been brought to life by some recent mental experience. I had no opportunity of confirming the first of these conjectures, though the general probability of it is to me from other experience practically conclusive, but as regards the second one the following contributions have some bearing. For some time before the dreams the subject had been troubled by conscience pricks, that by his indulging his personal wishes he was disappointing the hopes of a successful career his family had built on him, and the thought several times occurred to him that were it not for them he could follow his own fancy. For two weeks before the dreams his accustomed letters from home had not arrived, and the horrid idea kept crossing his mind that his previous thought, or half wish, might have come true. The distressing dreams, therefore, in which it appeared actually to be true, profoundly disturbed him, and nothing could relieve his anxiety except seeing his family safe at home. One knows how often an unreasonable or exaggerated anxiety and solicitude cover repressed wishes of a hostile nature, as in the case of the unhappy wife who is constantly trembling lest something terrible should befall her unsympathetic husband.

The *second* instance concerns a patient, an unmarried American lady of twenty-six. She was the eldest daughter, and had always been passionately devoted to her mother, regularly taking her side in parental quarrels. Since the age of fourteen she had been obsessed by the fear that her mother, who for many years had suffered from chronic heart disease, might die. She had never left home until, at the age of twenty, she went to an educational centre some two hundred miles away. Here she reproached herself for having left her mother, whom she had always tended. One evening, shortly after receiving a rather bad report of her mother's health, there was a college debate, and the side she defended had to wear as a sign of their partisanship a small red cloth shield. That night she dreamed that she saw her mother's bedroom very distinctly. It resembled the actual room in every detail, except that on the wall opposite to the bed was pinned a red shield and that her

mother was lying dead. She awoke in horror, and on the next day she travelled home by the first train. Here she found her mother ill in bed, but apparently in no greater danger than usual. Her first act, and surely an extraordinary one, was to pin on to the wall opposite the bed the little red shield. She rationalised this action as being intended to give her mother the opportunity of looking at an interesting memento. She slept with her mother, and on the second morning after awoke to find her dead beside her. The shock of this she had never got over; she tortured herself with remorse that in some mysterious way she was responsible for her mother's death, she felt herself always haunted by her spirit, and was totally unable to undertake any occupation whatever, even five years after. She suffered from a phobia of red,* and had never been able to revisit her home.

Those unaccustomed to exploring the deeper recesses of the mind will have no difficulty in framing a satisfying explanation of these facts — perhaps somewhat as follows: The dream was merely an expression of a natural fear, which again would beset any one whose dearest relative suffered from a mortal malady. The later symptoms and reactions are quite comprehensible in a person who had sustained such a peculiarly severe shock. Unfortunately for the truth of this simple explanation, the psycho-analysis I was able to carry out revealed a more complex state of affairs, only a fragment of which can here be described. At a very early age the patient had been greatly in love with her father, and had indulged in phantasies in which she saw herself supplanting her mother under various circumstances. About this time a disliked aunt, who lived with them, died, and the idea occurred to the patient that if a similar calamity were to happen to her invalid mother the loss would have its compensations in other directions. The wish here implied was strongly repressed, but lived on in the unconscious, where its activity was manifest only in the patient's excessive devotion to her mother and steadily increasing indifference, or rather antipathy, towards her

* Erythrophobia, as distinguished from ereutophobia, the fear of blushing, to which this term is sometimes incorrectly applied.

father; a pronounced homosexual tendency aided this process. The college debate, which was on the topic of divorce and remarriage, together with the bad report from home, had aroused the unconscious death complex, which came to fairly open expression in her dream. The dream differed from reality in two respects, in the presence of the red shield* in the room and in the death of her mother. The patient's action in bringing about a more complete correspondence between the dream and reality by pinning up the shield in her mother's room was a symbolic expression of her repressed wish that the correspondence might be completed in the other respect also.

The *third* instance was one that I observed some years ago in an English asylum. An old man had been arrested on account of an indecent offence, and had been sent to the asylum. There was no clear evidence of any definite psychosis, the only abnormality found being some slight senile deterioration. He was allowed to go about the grounds on parole, and one day he escaped, went home, and killed his wife and himself. There was a serious outcry in the local newspapers about the supposed remissness of the asylum authorities, and the assistant medical officer in charge of the patient was very perturbed, particularly, perhaps, as he was at the time anticipating an important promotion. One newspaper stated that only recently the relatives had visited the asylum and had warned the doctor that they were afraid of the patient, as he had threatened to kill his wife. The superintendent questioned the different medical officers, who were all sure that they had seen no relative, and had known nothing of any such threat; the story was subsequently shown to be a fabrication. However, two days before the coroner's inquest, the doctor in question, whom we may call X, came to the superintendent saying that he had a dim recollection of such a visit as that described. As Dr. X had previously been quite sure of the contrary, and was in general of an over-scrupulous and conscientious disposition, the superintendent dismissed it as a fancy born of his perturbation. Still, not only did the mem-

*I might say that the associations to these two words filled some twenty pages.

ory persist, but its outlines gradually got more clear and defined, so that by the day of the inquest Dr. X was convinced of its reality. It ran in detail as follows: "Two ladies visited him in his office at a busy time. A medical colleague was seated at a desk near by. Dr. X was struck by an undue familiarity on the part of the more prominent one, who leaned with her arms across his desk: still it was the other one, who stood at the side, that did most of the talking. They seemed to be relatives, probably daughters, of the patient. His attention was caught by the foreign way in which they pronounced the patient's name, *Merk*, and he tried in vain to repeat it after them correctly; in fact, he broke off the conversation for this purpose, and it was much the most vivid point in the whole memory. On hearing the ladies' complaint, he said that he would carefully look into the matter and have the patient taken off parole. When they left, however, he was so busy that he quite forgot the whole matter until two days ago, two days after reading the passage in the newspaper." In view of these facts, about which he no longer doubted, Dr. X considered himself responsible for the two deaths, reproached himself bitterly, and was very anxious as to the result of the inquest. He made up his mind to admit his grave remissness, and to offer as the only excuse the fact that he had been at the time much overworked. The superintendent asked him if he could recognise the ladies who had called on him; one he could not, but from the four daughters that were present at the inquest he picked out one as the lady who leaned across his desk. Fortunately, no questions were put to him on the matter, and shortly after it was proved that the story of the visit was a newspaper fabrication.

Dr. X's recollection must therefore have been a pseudo-reminiscence, and indeed the medical colleague in whose presence the visit was supposed to have taken place was positive that nothing of the kind had occurred. The whole story bears the closest resemblance to an account of a dream, notably the remarkable emphasis (psychical intensity) laid on one unimportant passage (the pronunciation of the patient's name), and the incongruous behaviour

of both the visitor and the doctor; in actual life the last thing he would do would be to break off a conversation of vital import in order to discuss a trivial matter. This view was confirmed by the fact that the memory just dawned on him in the early morning immediately after waking; no doubt his half asleep state contributed to give it a greater air of reality.

One cannot regard this conclusion, however, as being in any way a full explanation of the episode; on the contrary, it is at this point that the real problems begin. Experience shows that when an autochthonous idea acquires an unusual intensity in a person's mind it must be connected with mental processes of unusual significance to him; these may be either conscious or unconscious, and in the former case they are always connected with still more significant unconscious processes. I had no opportunity, nor at that time the ability, to trace out the underlying processes of the experience just related, but I preserved the following notes. After telling me, several times over, of the curious passage in which he had tried to learn from the visitor how to pronounce the German name, Dr. X went on to say that it reminded him of several fruitless attempts he had made to learn German. Like many alienists, he had realised the impossibility of proceeding with his studies in psychiatry so long as he could not read the German writings on the subject, but, owing to pressure of routine work, lack of opportunity, and possibly of determination, he had not succeeded in achieving this ambition. He had felt much chagrin and self-reproach in consequence, more so of late since the appointment he was then hoping to get was one that offered unusual opportunities for original investigation. It was thus evident that the self-reproach he had suffered during the episode related above was no new experience to him. From analogy with other cases of exaggerated self-reproach, felt even on imaginary occasions — as here, — one is safe in inferring that this trait was an important one in his character, and this is borne out by his general conscientious scrupulousness. Without doubt this must have arisen in deep and highly significant experiences in the past, almost certainly in early childhood, forming

what are called guilt-complexes, but I regret that I am not in a position to add anything more in this regard.

Returning briefly to the general question I would call attention to the following two considerations. Probably more of our daily conduct, moods, and beliefs than we think can be traced to preceding dreams. This is true of the normal, and perhaps to an even greater extent of the abnormal; one thinks at once of such matters as medium experiences, spiritism, telepathy, and the like. A much more important consideration, however, is the fact that the dream is never the ultimate origin of such beliefs, symptoms, etc. In the three instances just narrated, and in all others I have observed, it was evident that the dream itself was merely a continuation of previous waking mental experiences, a conclusion which is, I think, accepted by those who have studied the subject as being generally true of all dreams.* The most that the dream can do is sometimes to give the mental process in question its particular form. To trace a given process to a preceding dream is thus only a step, and by no means an important one, towards the elucidation of it. It constitutes merely an intermediate stage in the proper analysis,† the next, and far more important one, being the elucidation of the dream itself. It was this empiric experience, that psycho-analysis of various mental processes frequently leads of itself to the memory of certain dreams, that led Freud of necessity to undertake the investigation of the structure, origin, and meaning of these, with what brilliant results psychologists are gradually beginning to realise.

*It is not necessary here to discuss the question of somatic excitations during sleep, for since Freud's work it is not probable that any one will maintain that these are ever the whole cause of any dream.

†A recent communication by Kreist to the Société de Psychologie (*Journ. de psychol. norm. et path.*, 1910, p. 252) contains a singular illustration of the prevailing tendency to be satisfied with the first steps of a psychological analysis. A certain married couple were continually in dispute, and a divorce was talked of. The husband, as is usual under such circumstances, recognised in himself an alternation of antipathy and tenderness. There was no apparent cause for the disharmony. Kreist hypnotised the husband, and found that his antipathy to his wife dated from a given dream, which had been previously forgotten. According to Kreist the whole trouble was due to this dream (!), and peace was restored as soon as the husband learned the trivial cause of it. It would be interesting to know the later history of this touching episode.

THE DETECTION OF A CASE OF SIMULATION OF INSANITY BY MEANS OF ASSOCIATION TESTS

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IT is a dangerous enterprise to prematurely apply theoretical findings of any science to practical use, as the frequent failures which result therefrom not only discourage the workers, but also cast discredit upon the work itself.

Psychology, because of its extreme youth as a science, is in a somewhat perplexing situation just at the present time. Its extensive development during the last few decades—it was at the recent date of 1875 that Wundt's Psychological Laboratory in Leipsic was opened—renders it most difficult for even a specialist in this science to become familiar with contemporary psychological research work in its entirety.

The use of the term child prodigy, because of this apparent precocity, may therefore not be considered misapplied. One cannot indeed overlook the marked similarity with its implied dangers existing between psychology in its present state and those musical wonders who, pushed before the public because of their fascinating powers to charm, are forced thereby to neglect their studies and opportunities for serious development, thus after a few years carrying with them their stunted growth into the oblivion of unfulfilled expectations and general disregard.

In answer to the demands for proofs and demonstrations of the growth of psychology, from those standing in friendly as well as antagonistic relations to this science, there have appeared during the past few years books and articles proving the fact that psychology in the past thirty-five years has reached a point of development which it has taken centuries for other sciences—physics, for instance, to attain.

However, in spite of the fact that we are prepared to utilize our theoretical experiences and put to the test their practical usefulness; in spite of the fact that a few psychological findings have already demonstrated their intrinsic value along these lines, the apparent success with which these methods have been taken from the hands of skilful psychologists and adapted to various uses and purposes by physicians, teachers, and social workers, has been too general to inspire confidence in the durability and permanence of this success.

The eventuality, therefore, of a reaction, with its accompanying logical criticism, both embarrassing and disappointing to the enthusiast, is not to be lost sight of. Wilhelm Wundt himself, the father of our modern experimental psychology, warns us of the dangers arising from this utilization of psychology for its own practical purposes, and in a recent article* in which he speaks of Meumann's Applied Psychology in Pedagogics, he protests against the abuse of psychologic tests, the value of which have not as yet been clearly and definitely settled upon.

Association tests are the most popular form of tests among all practical psychologists, and there is no doubt but that their skilful and critical use is of eminent value for the physician, teacher, and social worker.

In this article I wish to introduce a case in which the association test was the means of the verification of my suspicions of a simulation of insanity by a criminal.

*Wilhelm Wundt, *Psychologische Studien*, v. 5, 1910. Über reine und angewandte Psychologie. On page 47, concluding the criticism of Meumann's applied psychology in pedagogics, he says, literally, " . . . Wenn ein Forscher, der, wie Meumann, in früheren Arbeiten glänzende Proben seiner Befähigung für die Analyse psychologischer Einzelprobleme abgelegt hat, durch eine längere, vielleicht allein ausschliessliche Beschäftigung mit Lernmethoden und ähnlichen praktischen Aufgaben, auf solche bedenkliche Wege geraten ist, was soll man aber dann erst von den experimentellen Pädagogen erwarten, die ohne diese Vorbereitung, der Führerschaft der von der Psychologie heruebergekommen Pädagogen folgend, Erziehung und Unterricht reformieren wollen? Wiederum kann man ihnen nur raten, zunächst und vor-allem allseitig gebildete, nicht einseitig orientierte Psychologen zu werden und dann an die Frage hinzutreten, wie von dem so gewonnenen Standpunkte aus auch der Pädagogik neue Aufgaben zu stellen seien."

My polemic against the abuse of psychology was intended for the numerous skeptics as a proof that I am not only aware of the difficulties associated with the application of laboratory tests to practical use, but also of the dangers which result from the drawing of false conclusions.

I also wish to prove by the publishing of this article the incontestability of the practical use of the association test with proper and objective application, the success indeed resulting therefrom having already in many instances been proven beyond a reasonable doubt.

In the fall of 1909 there was admitted to the Danvers State Hospital a young man of twenty-one, F. B., who, according to the physician's certificate (I must remark that the committing physicians were skilful psychiatrists), was an epileptic, who had had on several occasions periods of amnesia, and who, apparently in an epileptic twilight condition aggravated by alcoholic excesses, had committed a highway robbery.

The history given by the father did not convince me of an epileptic condition, although his story in no way disproved the possibility of such a condition. No hereditary history was given.

On admission the patient was clear, good natured, emphasizing the fact that he had absolutely no recollection of what had led to his arrest, admitting only alcoholic excesses and the knowledge of his having committed assault and battery on an old man, at the same time stating that this knowledge had been acquired when the police officer had arrested him. His story seemed to be probable, and he did not contradict himself to any remarkable extent in the following few weeks of observation.

I can give no definite reason for my doubts that the patient's amnesia was other than genuine, except that I suspected in him a tendency to fabulation. The association tests made at the time did not prove anything significant, as I was not in possession of the facts or circumstances under which the crime had been committed. My first report, therefore, to the district attorney bore the statement of my inability to form an opinion at the time stated, regarding the prisoner's sanity.

The case was put on file.

Two months after the commitment, the patient's conduct meanwhile in the hospital having been exemplary, with no occurrence of any epileptic manifestations, I finally was able to obtain an account of the circumstances under which the crime had been committed. The youth, it seemed, had entered a grocery store belonging to an old man in Gr., in a somewhat intoxicated condition, giving to the grocer as an excuse that he had come to warm himself near the fire. It was nearly eight o'clock in the evening and, the grocer having closed his store for the night, the young man insisted on accompanying him, in spite of the grocer's protests, and together they walked some distance along the street. In a deserted part of the town, where there were few passersby, the young man suddenly knocked down the grocer and demanded money. The assaulted man receiving no assistance to his cries for help, the young man was given the sum of two dollars and departed from the place, leaving the grocer to his fate.

The old man's wound proved to be of minor severity, but as he was of the advanced age of eighty years and had lost much blood, he was quite sick as a result for some time. After the assault, the patient went to a saloon where a couple of hours later he was arrested.

Having now become acquainted with the facts I constructed a series of words dealing with the circumstances of the assault and inserted between them various indifferent words of no import or allusion to the crime.

ASSOCIATION TEST*

Test Word	Time in Seconds	Association	Reproduction	
		Word	10 minutes later	
house	3 seconds	grass	4 seconds	water
table	3 "	chair	2 "	chair
room	5 "	suite	3 "	yes
watch	2½ "	time	2 "	time

*In order to make the test more transparent I have omitted many insignificant words which are indicated by the number of dashes inserted between the test words. His normal time of reaction in former tests was between two and a half and three seconds. Association test words were repeated ten minutes later and are recorded under "reproduction." Time was recorded with a stop watch.

Test Word	Time in Seconds	Association Word	Reproduction 10 minutes later
police	3 seconds	"Billy"	3 seconds badge
father	3 "	love	2 " mother
grocery	6 "	You said grocery? fire	8 " time
old man	5 "	youth	4 " father

murder	2 "	help	9 " no sir
liquor	3 "	fire	4 " bad
memory	22 "	house	3 " yes sir

robber	3 "	thief	3 " thief
dollar bill	4 "	silver	2 " memory

imagination	5 "	water	5 " no sir
insane	4 "	no sir	1 " no sir
guilty	2 "	no sir	4 " no sir

prison	5 "	no	3 " yes
bed	2 "	cloth	2½ " cloth
mother	2 "	father	2 " father
Reagan	2 "	Thomas	4 " storekeeper
King street	1 "	yes sir	11 " Gr.(name of place)

left pocket	4 "	clothes	2 " clothes
money	2 "	bills	3 " paper
left temple	4 "	left temple? brain	8 " bottle (?)

blow	3 "	with the right hand	2 " no sir
false	14 "	time	2 " hope
horse	1 "	harness	3 " wagon
God	2 "	Jesus	5 " man
punishment	1 "	yes sir	4 " yes sir

DISCUSSION OF THE TEST

The first six words were of indifferent character and were within the limit of normal association time. The first test word having some connection with the crime was the word "grocery." The time of association was immediately doubled and the association words were "you said grocery? — fire."* The association for the test words "old man" was somewhat retarded — five seconds — and was insignificant. The next five indifferent words showed

*I have often remarked that in test words having some emotional value, the word is repeated in a questioning manner, as though it had not been heard correctly.

the normal association time of three seconds. To the next test word "murder," the time of association was shorter than his usual time of reaction, and the word "help" was given with a sharp intonation, as though he were in reality calling for help. To the word "liquor" the association time was normal, the association word being "fire." To the word "memory," after twenty-two seconds, he answered "house."* Four indifferent words followed with a somewhat increased time reaction. To the test words "robber" and "dollar bill" the time was fairly normal and the association words insignificant. To the test word "imagination" after five seconds, he gave the association word "water." The association to "insane" and "guilty" was "no sir." In the first instance the time required was four seconds, and in the second instance two seconds. To the word "prison" up to five seconds he gave the association word "no." To a few insignificant words the association time was now somewhat prolonged, approaching four seconds (in appearance the patient was somewhat excited, his face being rather flushed). To the name of the assailed man the association time was two seconds and the association word was the man's Christian name. To the sharply spoken name of the street where the assault happened, the association time was extremely short, for him, being hardly one second, "yes sir." The four indifferent words following showed an increased time, between four and five seconds, otherwise insignificant in their association. To the words "left temple," after four seconds, "left temple? — brain." Six insignificant words followed. To the word "blow" after three seconds, "with the right hand." To the word "fake," after fourteen seconds, "time."

After ten minutes I repeated the same test words, having in the mean time made no reference whatever in our conversation to my suspicions regarding his simulation. I must add, however, that a few weeks previous I had mentioned to him the possibility of his simulation, to which he had replied with great indignation in the negative. During this ten minutes' time the patient smiled often, seemed to be thinking hard and acted as though he were

*The first word in the association test.

feeling quite uncomfortable, without, however, making any comments. To the first test word given him, "grocery," he reacted after eight seconds, with the word "time." To the word "murder," up to nine seconds, "no sir." To the word "memory," after three seconds, again, "Yes sir." To "dollar bill," after two seconds, "memory." To "King Street," after eleven seconds, "Gr—" (name of the town). To "left temple," after eight seconds, "bottle." To "blow," after two seconds, the words "no sir."

Studying this association test, I constructed from these words a plausible hypothesis of the patient's process of thought during the experiment. At the beginning of the experiment he was free from any suspicion or anxiety, for it had been tried on him before, and on other patients, as a matter of routine, and the attitude he took was one rather of amusement. When the first word was given, which was of significance to him (the word "grocery"), he started and repeated the word as though he had not clearly understood, the real association word being "fire." This first association was evidently sufficient to arouse his suspicions to such a degree that his thoughts were directed as I intended them to be, along the course of events relating to the adventure in question, this being shown by the fact of his having mentioned to Mr. R., upon entering the grocery, that he had come to warm himself near the fire. Nevertheless, in spite of this, he apparently decided that the word was purely accidental, having at the same time without doubt a definite review of the scene which had taken place at the time of responding. In this way, when the word "murder" was given he unconsciously and very quickly responded with the "help" in a realistic tone of voice, which undoubtedly was a reminiscence of the cry for help uttered by the old man. The idea then presented itself to him that this association test might be of more importance and more compromising than was desirable, and not simply, as he had previously thought, a matter for amusement or of routine. When the word "memory" was given, therefore, he was greatly embarrassed how to answer, and for twenty-two seconds he tried to figure out an innocent answer, finally choosing the first best word

which entered his mind and which happened to be the first test word that had been given him in the experiment. To a few indifferent test words following, the associations were insignificant, the time of reaction, however, prolonged, which simply proved that he had not entirely recovered from the shock. To the words "insane," "guilty," "prison," he responded with "no sir." These associations proved that he had begun to attach a grave importance to the test, and responded as though they were questions directed to him. Upon the name of the assaulted man being given him he undoubtedly became convinced that the test was a kind of investigation, and becoming alarmed, realizing the whole danger, the scene of the assault presented itself in such a vivid manner to him that when the next word was given — the name of the street where he had committed the assault — he involuntarily answered the truth with "yes sir." As he had previously claimed that he did not even know in which of the neighboring towns he had committed the crime, this reaction, as well as that to the next test word, in which he reveals the truth, in spite of his better sense and wish, being forced to respond in a way contrary to that which he intended, is in accordance with the well-known explanation of Freud's "*Sich-Versprechen*" (slip of the tongue).*

His excitement and embarrassment now increasing, to the test word "blow" he finally reacted with a description of the manner in which he had inflicted it "with the right hand." During the ten minutes following he had time to think over the danger which his associations were likely to entail upon him and tried to correct himself, when the same test words were given again, which very thing, however, proved to be a still more convincing indictment. This time to the word "grocery" in the reproduction he associated the word "time." To the test word "murder," after nine seconds, "no sir." To the test word "memory," he responded, "yes sir" (Freud's Paradox Reaction cited above). To "King Street," after eleven seconds, he gave the name of the town where King Street is. To "left temple," after

*See Freud's *Pathologie des Alltagslebens*; quite an interesting example in literature would be the *Sich-Versprechen* of Mime in Wagner's *Siegfried*, while inducing the young Siegfried to kill Fafner.

eight seconds, the word "bottle."* To the word "blow," "no sir," and to the word "fake," after two seconds, "hope," which latter word would indicate quite a reasonable suggestion that he hoped his faking would be successful.

CONCLUSIONS

This experiment proved to me the facts beyond any possible doubt that, not only did the man show no sign of being afflicted with any form of amnesia whatsoever, but also that his degree of intoxication at the time of the assault was far from being severe, as he had a more precise recollection of his actions than even a moderately intoxicated man would have had.

The description of his condition, that is the degree of his intoxication when found by the police, was such as would render him under continental law irresponsible for the commitment of the crime — in Austria, for instance, he would have been punished merely for the fact of his being intoxicated — his mental condition falling under the head of "clouded consciousness," which eliminates all legal responsibility.

My conclusion drawn from his behavior under the test was that he had reached this degree of intoxication *after the crime*. For a week I mentioned nothing of importance regarding this experiment to him and he avoided any reference to the test. Then taking him aside for a private conversation, I said, "John, you remember the experiment we had a week ago? It proved to me without doubt that you are not insane, that you never were insane, and that you are only pretending not to remember anything that has happened." *I carefully avoided making any reference to any details of the crime.*† "I shall make a report to

*At that time I considered the association word as an accidental one, his confession, however, proved that in his embarrassment over what to answer the association proved to be very pertinent, the blow having been struck with a full bottle of whiskey which he had in his possession, a fact unknown to the police, but revealed by the patient himself in his confession.

†Professor Münsterberg, to whom I mentioned this experiment, raised the possible objection that even this test would not necessarily prove that his amnesia was not genuine. It might be possible, Professor Münsterberg suggested, that the

the district attorney to this effect, and although it is of no importance to me what you do, I nevertheless sincerely advise you to give up faking, as it will make a very bad impression on the court, and it will only be to your advantage to make a clear confession."

The patient did not reply for about two minutes. I waited. Then he asked me, "In what way would it help me?" I answered, "I cannot tell you exactly, but I think that it would shorten your sentence." "Then, doctor," he said, "I admit I faked from the beginning." He then told me the whole story, with minute details, even drawing for me a plan of the street where it happened, showing the places which he had selected for the crime, as he confessed that he had entered the store with the idea of committing assault, and giving as the reason for his change of plan that he had thought there were people passing in the street. A description was also given of the blow which he had inflicted, correcting the statement of the assaulted man regarding the amount of money received, stating that he had asked for only two dollars and had received four. He now seemed most anxious to give an exact account of the

test words themselves had brought back a remembrance of the occurrence in a suggestive way. This objection is an exceedingly proper one, as it shows that even when in possession of as clear a case as the one we have at hand, with apparently unmistakable proofs, one should be most careful in the interpretation of the findings before the proper conclusion may be drawn. The exception thus grounded would be very grave, were it not for the subsequent confession, and had I not taken the precaution immediately after the experiment, to refrain from mentioning any of the items in the findings and from referring to any of the details of that which had taken place: nor did I omit taking these precautions even a week later; I merely stated, both these times, the conclusions which I had drawn from the test.

Experience shows us that a sudden return of memory in epileptics is just as likely to occur as a sudden loss of the same. Epileptics in court, for instance, often confess something which they have previously denied for some length of time, the next day again persisting in their denial, this at the same time being perfectly genuine. As can be seen, these reminiscences do not "stick." The analogy to this transitory clear memory we have in our dreams; in the morning we can remember them quite well and are capable of reviewing them, although a couple of hours later we may have no remembrance of having gone through this process, in spite of the fact that it had apparently taken place in a perfectly awakened state of mind. (Compare Kræpelin's statement on this subject in the *Psychiatrie*.)

assault* and finished his confession with the remark, "Well, I thought I was smart, but there are smarter ones than me. When you tried that test on me I thought that I had given myself up, but hoped [compare association word "hope" with the test word "fake"] that you would not notice it. I never supposed that from single words I said you could find me out. Now, doctor, be good to me and try to help me in court."

I made my report to the district attorney and the case came on trial soon after in the Superior Court in Salem. The patient pleaded guilty, and I was called on the witness stand to give my opinion of the man. Up to now the case had seemed to be quite clear, but at this point I began to have scruples, as I didn't feel justified in saying that the man was fully responsible for his actions. One could not call him feeble-minded in the ordinary sense of the word, as his skilful and in a way successful simulation showed a fairly decent amount of self-control and mental competence. At the same time he was in a way of a low grade of mentality, a good-natured giant (the man stands six feet three inches in stockings) who would have harmed no one, it seemed to me, had he not been weakened by some outside influence which in this case was alcohol. I did not consider him of the class of brutal highway robbers, as he had attempted no disguise, and his apparent lack of consideration that the assaulted man would recognize and report him amply showed that we had to deal with an inferior individual under the influence of alcohol.

The question which now presented itself for me to decide was whether the man was insane or not. I was compelled to deny that he was afflicted with a psychosis, although the very fact of his simulation showed a certain strain of abnormality in his makeup. His degree of feeble-mindedness was not sufficient to warrant exemption from punishment. While I fully recognize that under the influence of alcohol and bad society this man might prove to be an extremely

*A very well-known experience with criminals, that in the moment of confession it is done with apparent pleasure, and they incriminate themselves more than is necessary. They often indeed confess to crimes which it was not previously suspected they had committed.

dangerous individual, his good nature, his tendency to being easily influenced, and his perfect conduct in the hospital, as he had shown himself a help to other patients, had not attempted to escape, and had shown himself to be a splendid and steady worker, all these facts led me to think that he might not be entirely lost, which would, therefore, not exclude the possibility of his living at large, after having been subjected to the influence of some favorable work of reformation.

The insane hospital was not the place for him, the conditions there, such as overcrowding, want of sufficient force of specialized physicians, etc., with no time to devote to the work of reformation, would make this institution unavailable, his detention there being simply a custodial one. The prison would be absolutely detrimental in its influence, as he would there come in contact with obstinate criminals, and would no doubt as a result develop into one himself. Having frankly stated my doubts and objections to the judge, I was then asked whether I would not apply to the respondent the legal term of the German criminal code of "diminished responsibility,"* and I, answering in the affirmative, the judge having recognized the force of the stated doubts, the prisoner was sentenced to the one appropriate institution in the state, that is to the Concord Reformatory for an indefinite term.

This example proves that psychology, even in its present adolescent state, can be of assistance in problems of practical life, although it would be entirely wrong to contend that by the association test the truth of a person's statement could be positively determined. Indeed, if the association test were to be used for this purpose, I should prefer to refrain from the use of it altogether.

Some writers on this subject seem to entertain this dangerous delusion, which would lead to more miscarriage of justice and errors than one could possibly imagine. Our

*The modification of responsibility in the German criminal code has proved in reality to be more harmful than useful. A criminal of this type gets a shorter sentence and in this way, he being released from prison sooner, would earlier become a chronic danger to society. The only possible jurisdiction for the pleading of diminished responsibility would be an unlimited sentence in some reformatory, as happened in this particular case.

psychic apparatus is too complicated to admit of its subjugation to such a mechanical law.*

I believe, however, that by skilful application to certain cases, the association test may prove a very valuable addition to many tests in criminal investigating work, as has been lately shown by the Bertillon methods, etc., and be of great assistance in many instances for clearing away doubts as to the truthfulness of witnesses.

In the case under review, I worked with a man wholly unprepared and incapable of understanding the purpose of the investigation, ignoring the facts that a hesitation, a change of word in the reproduction, were the very instances which would most convincingly tell against him. Considering even the circumstance of his knowing these facts, of his even being a psychologist quite skilful in psychological technique, he would be equally unable to control the form of his answers and the time of associations, even to a fraction of a second. The attempt to control his answers or prepare them beforehand would incriminate him more than anything else. In this same way a refusal to co-operate might be equally harmful as a result.

This argument in favor of the association test is rather directed to the sceptical students of law, as the psychologists themselves are more inclined towards an optimistic than a pessimistic view of the success of these tests. One cannot doubt the humaneness of this method of seeking for truth, as compared with the third degree system which is still in practice in Russia, and strange to say in some police stations in this free country of the United States. The criminal himself would scarcely object to this form of investigation, as it would rather impress him with the fact of his having been cleverly overtricked; to the very end both he and the examiner are able to remain on friendly terms, as it happened in the case which I have just reviewed.†

*Cf. Münsterberg's, *On the Witness Stand*.

†It was quite interesting to me to know how my patient had formed the idea of faking insanity. He told me that it had not occurred to him until his examination by the committing physicians, and that it had then seemed to him that to be declared insane would be a rather nice way of getting out of his difficulty, inasmuch

The case I have reported is in many ways a model case and one would probably not often find such an easy task as this one proved to be. Nevertheless, it can be said that the association test will almost always be of some help in advancing a criminal investigation.

as he would behave well in the hospital and would probably be released after a little while. This certainly would be easier for him than going to prison, in fact he had already heard about its being done and had read of it in the papers — for instance — the Thaw case.

The idea of faking amnesia presented itself to him through a leading question put by the examining physicians — a fact in no way reproachful to them, arising, as it did from the conscious effort on their part to make as complete an examination as possible. This incident, however, shows how dangerous, in many cases, a definite suggestive question may prove, putting a ready answer in the mouth of the witness. (Compare with Stearns's work on evidence.) Last, but not least, I would call attention to the effect of newspapers containing reports of murders, etc., upon the minds of those criminally disposed. To illustrate this, consider, for instance, a clever book by Melville Davison Post, *The Strange Schemes of Randolph Mason*, which one might almost say contains a direct invitation to crime. It is not my desire to advocate censorship, but a restriction should certainly be placed upon the circulation of such dangerous types of literature. If the subject Mr. Post deals with had been introduced by him in the form of a serious work, it would have proven to be of very great value, whereas now, in its present form of a light novel, its harmful influence is immeasurably extensive. The only appreciable value of the book, indeed, is the comparative expense of the edition. Books of this kind should be excluded by law at least from public libraries. The author's intentions, no doubt, were all that could be desired, attempting to prove, as he did, the ineffectiveness of law against certain crimes, if skilfully prepared, and to his credit I wish to believe that he simply failed to realize the limitless dangers associated with his publication.

A CONTRIBUTION TO THE PSYCHOPATHOLOGY OF HYSTERIA

BY ISADOR H. CORIAT, M.D., BOSTON, MASS.

I.—*The Problem of Hysteria*

From the various problems offered by the psychic mechanism of hysteria have originated vistas in psychopathology which are of greater value than those offered by any other psychoneurosis. The light thrown upon this subject, however, cannot be gained through a mere superficial study of cases from the clinical standpoint alone, but other evidence must be gathered by means of all the known devices of psychopathological research. For this purpose long observation and minute analyses are necessary, as no details are too small or too unimportant for the study of the psychogenesis of an hysterical dissociation, particularly when we consider the large part played by the conscious or subconscious life experiences of an individual in the predetermination and formation of hysterical symptoms. In presenting a study of the following case of hysteria, it is felt that a certain amount of criticism will be disarmed, particularly in the interpretation of the dreams, when it is stated at the beginning that the subject of this analysis has been under close observation and study for a period of more than one and a half years. Furthermore, the subject was a highly intelligent and cultured young woman, who understood the purpose of the analysis and thoroughly co-operated in it. Her mental makeup was such that it was often possible to trace the origin of her present symptoms to a very early period in her childhood life, a procedure which would have been wellnigh impossible in a less intelligent individual.

Detailed studies of this type are rather uncommon, in fact, the literature furnishes but a few examples.* Con-

*See particularly S. Freud. Studien ueber Hysterie (particularly the cases of Miss Lucy R. and Miss Elizabeth V. R.), also Bruchstück einer Hysterie Analyse. *Monat. f. Psychiatrie und Neurologie*, Bd. XXVIII, H. 4.

Morton Prince. The various publications in the JOURNAL OF ABNORMAL PSY-

cerning the psychogenesis of hysteria it was shown by Janet that a series of emotional disturbances could cause not only various types of anæsthesia, but also varying grades of a mental disintegration. At the beginning this latter was particularly liable to assume the form of an exaggerated absentmindedness, which various analyses have shown to be merely normal analogues of a pathological mental dissociation. These emotional experiences, according to Janet, are particularly liable to assume an automatic character due to the weak mental synthesis of the hysterical subject. It is this automatism which explains the insistence of hysterical symptoms and their tendency to assume the character of a recurrent psychomotor attack. Freud later confirmed these theories and demonstrated by a series of minute psychological analyses that sexuality was the most potent of these emotions in the causation of an hysterical dissociation. For instance, it was shown by him that these sexual experiences could be traced back to the earliest days of childhood, were preserved in the unconscious and acting like a foreign body did not merge with the general stream of consciousness. It was on this sexual basis that the hysterical process arose. The dreams of hystericals (and also of normal individuals) according to Freud, represented marked egocentric sexual mechanisms and were the imaginary fulfilment of a wish which acted only in sleep when the normal censor of consciousness was inhibited or in abeyance. In children, while the wish may be repressed, yet it is clearly defined, and hence the dreams of children are often literal transcripts of their daily experiences. In adults, on the contrary, the wish may be so disguised and distorted by later individual experiences, and the long process of time, that it becomes almost unrecognizable and can only be interpreted through psychoanalysis. This mechanism takes place because past experiences tend to group themselves

CHOLOGY concerning the case of B. C. A., and also of Miss Beauchamp in the *Dissociation of a Personality*.

L. Binswanger. Versuch einer Hysterie Analyse, *Jahrbuch f. Psychoanalytische u. Psychopathologische Forschungen*. Bd. I, H. 1-2.

Isador H. Coriat. The Case of Miss F., *JOURNAL OF ABNORMAL PSYCHOLOGY*, pp. 163-173. Case of Mrs. Y., *ibid.*, pp. 216-232.

into associations called complexes, and these complexes, while latent, exist in a very active form in the subconscious mental life. Hysterical subjects suffer constantly from repressed emotional experiences, and it is these repressed, unconscious experiences which are the mischief makers concerned in all hysterical processes.

Psychoanalysis, by means of discovering the emotional experiences, changes the repression to one of free expression, with a decided therapeutic result. While criticising Janet's conception that a splitting of consciousness is a primary feature of the hysterical condition, yet he is forced to admit that this splitting exists in a rudimentary form in every hysterical case. Since it is this dynamic theory of hysteria and dream formation that is to-day attracting a wide amount of attention, it is the purpose of the psychoanalysis of the case of hysteria with which this paper is concerned, to attempt to either verify or disprove these theories on the basis of a minute analysis. The questions to which principal attention will be directed are as follows: How far back in childhood can the sexual emotion be traced? Do these elements predetermine and enter into the symptoms and dreams? Are the dream mechanisms wish fulfilments? How do the dreams disguise themselves and become symbolic? And finally, how do the unconscious complexes act — that is, are they dynamic or static psychical elements? We will further attempt to show that there is no conversion of psychical antecedents into hysterical symptoms, but that the mechanism is more likely an automatic repetition of the original emotional experience with its physical correlates.*

The latter was clearly demonstrated in the psychoanalysis of my case of Miss F.† Here it could be definitely shown that the choreiform twitching of the arm from which the subject suffered made its first definite appearance at the time of an emotional shock years previously, and that

*For an account and criticism of the Freud School of Psychology, see my paper on Hysteria in the Light of the Analytic Method, *St. Paul Medical Journal*, September, 1910.

†JOURNAL OF ABNORMAL PSYCHOLOGY, 1910, pp. 165, et seq.

there was no conversion of psychical into physical in Freud's meaning of the term. This experience was dissociated from the conscious mental life and could be recalled only in hypnosis. When a synthesis of the dissociated elements was finally accomplished, the twitching disappeared. Whether or not the hysterical complex is formed in the waking condition or whether we must postulate a special hypothetical hypnoidal state, is a question which also will be discussed in the light of the analysis of the present case.

Analyses of this sort also furnish a practical contribution to the theory of psycho-physical determinatism, in which it may be shown that certain psychical symptoms are not due to chance, but can be traced to definite psychical antecedents. They thus furnish some proof of the mysterious connection between the traces conserved by perception and experience and of certain phenomena which follow this conservation in the nervous system. It is on this theory of determinism that the psychological principles of the various psychoanalytic procedures are based.

II.—*History*

When Miss L., the subject of this study, first came under observation, she was about thirty years of age. The hereditary data showed that she came of decided New England stock. The paternal grandmother had been a nervous invalid for years, a paternal aunt was insane, while the mother died of tuberculosis when the patient was quite young. All the members of the paternal branch of the family were more or less neurotic. When the subject first presented herself there was a typical picture of what is usually termed neurasthenia. As in many of these cases, however, the neurasthenic condition was found to be superficial, for when the condition was closely analyzed, it proved to be a complex hysterical state. These neurasthenic symptoms were also found in two other hysterical dissociations closely studied by Prince, namely the cases of Miss Beauchamp and B. C. A., thus showing that what is usually termed the neurasthenic state is merely one form of mental disintegration, closely allied to hysteria, and in some cases identical with it.

As a child Miss L. was irritable, rather unstable in her conduct and manner, and neurotic to a high degree. When about twelve years of age she experienced a period of exhaustion lasting for several months, in the course of which she was compelled to lie down during the day for hours at a time, so severe was the sensation of fatigue. At the age of twelve her mother died of tuberculosis and shortly afterwards her father married again. The details of her mother's death, followed, Hamlet-like, by her father's speedy marriage, made a profound impression upon this highly impressionable child. This episode, with what followed in the household in connection with her newly acquired relative, undoubtedly marked the beginning of the mental disintegration.

Her stepmother was irritable and ill tempered, and on this basis arose many of the symptoms to be chronicled later in the course of the psychoanalysis. During this period a continual state of tension existed between the patient and her stepmother, who manifestly had no love for her husband's daughter. At first the father interfered, but he soon became dominated by his wife's influence and remained a passive spectator of the indignities heaped upon the little girl. She was made to act as a servant for the family, and if she omitted any details of the prescribed household duties or attempted to amuse herself by play, she was severely punished. For years she was not allowed by her stepmother to take her meals at the table with the rest of the family.

She thus lived in an atmosphere of continual mental strain and conflict, and six years before she came under observation the hysterical state and the automatisms first made their appearance. During this period, however, she had managed, in spite of all obstacles, to secure an education, and finally became a teacher in one of the public schools. For a number of years after the nervous breakdown and continuing up to the period when she first came under observation, she had been troubled with a medley of dreams. For the most part these dreams were clearly remembered on awakening and furnished valuable evidence for an analysis of the mental condition. Since her nervous breakdown

she has been subject to insomnia and during the day has had periods of intense reverie and day-dreaming. From time to time she would go into trance-like states in which she would discover herself in strange places, or would find that she had done certain peculiar things, without any memory for the acts. These "lost periods," so called by the subject, were found on analysis to be conditions of mental dissociation, caused by emotional states or ideas usually of a sexual nature.

During the years she lived with her stepmother, the series of emotional experiences which took place at this time, as I hope to show later, shaped and were even directly responsible for the present symptoms. As a result she developed a feeling of hatred for her stepmother, and although this feeling was strongly repressed by her waking consciousness, nevertheless it appeared in and colored some of the dreams.

The symptoms for which she consulted me were a sense of severe exhaustion, insomnia with multitudinous dreams, paræsthesias along the spine, fleeting pains in various portions of the body, peculiar changes and strange sensations referable to her personality, a sense of profound unworthiness and depression and a feeling as if she were not as good as other people. In addition she suffered from peculiar attacks in which the vision would suddenly become blurred for short periods; on other occasions she would have the severe absentminded acts and the lapses of consciousness before referred to. Frequently, on meeting people, she would become embarrassed, experience a sense of anxiety, the heart would palpitate, the face flush, and the body would tremble. Irritability and an increased feeling of self-consciousness were quite marked, and occasionally, particularly when she closed her eyes, and in the drowsy period preceding sleep, horrible and distorted faces would appear in the field of vision, at other times these would change colors as if seen in the field of a kaleidoscope, which was being turned by an unseen hand. Attacks of nocturnal paralysis were likewise frequently experienced.

Two years before coming under observation, following a love affair and an offer of marriage, she was in a delirious

state for several weeks, for which she retained only a fragmentary memory. It was possible, however, to restore the entire memory for this delirious period. The chief motive of this hysterical delirium was a birth fantasy. This love affair had a most pernicious influence on the neurasthenic state. At times she would become obsessed by sexual ideas or a feeling of sexual hyperæsthesia. On these occasions, as the ideas were naturally repugnant to her refined nature, she was most unhappy and found it necessary to fight for hours at a time in attempts to keep these ideas in the background of her mind. Because of the neurasthenic state she had been compelled to give up teaching, although during the period of observation she was successfully discharging secretarial duties.

The usual physical stigmata of hysteria, such as sensory disturbances and limitation of the field of vision, were absent. Many of the mental stigmata were present, however, such as the neurasthenic complex, and a moderate amount of aboulia.

III.—*Psychoanalysis*

In this case the amnesia for some of the events of childhood was quite striking, and it could be shown that this forgetfulness was a purposive and intentional one, due entirely to the voluntary repression of unpleasant memories. In experimental distraction and through the means of dream analysis, it was possible to recover many of these childhood memories. In fact, so marked and vivid did the events of her childhood life appear in some dreams that I have ventured to call them hypermnesic dreams. In many ways these dreams were perfectly analogous to the hypermnesia experienced by some individuals at the time of harrowing emotional experiences. Thus the amnesia of the waking life became the hypermnesia of sleep, the dream life.

At first, due to the very nature of the experiences stated, there was some diffidence to psychoanalysis, but little by little the resistance to analysis was overcome, little by little it was possible to penetrate deeper into memories of the patient, until the origin of every symptom and dream was laid bare and could be clearly traced to a definite psychical antecedent.

So active were the subconscious mental processes during sleep that they produced constant dreaming and hence disturbed sleep, causing insomnia. Then a fear of dreaming arose, and thus in turn completed the vicious circle, and acted as an obsession which caused sleeplessness. On other occasions she would lie awake for hours at a time, in a kind of a dreamy reverie, with the limbs tense, the eyes closed, and scarcely daring to breathe. In fact, under these circumstances she would find it difficult and at times impossible to make any voluntary movements. This protracted nocturnal paralysis could be definitely traced to certain experiences in the early years of childhood and was also frequently reproduced as a post-hypnotic state. The data furnished by the analysis of this case also demonstrated that the most complex active thinking processes influencing the entire psycho-physical life, might occur without the subject becoming aware of them. This is certainly a most convincing argument against those who hold that the subconscious is purely a physiological process, unaccompanied by any mentation whatever. It also showed how the emotions might become entirely dissociated from their accompanying ideas, and thus the subject would show merely an emotional reaction, whose psychogenesis could only be determined through psychoanalysis. A definite continuity could be established between the subconscious idea and the conscious emotion. Thus the dreams, day reveries, neurasthenic symptoms and absentminded acts were not haphazard and by chance, but could be reduced through psychoanalysis to an intelligible order. These abnormal phenomena were due to certain complexes, which had left their traces upon the central nervous system. These complexes were not always active, but became so only under certain and special conditions, such as sleep, free association procedures, and absentminded states. These complexes therefore possessed a potential energy in the subconscious and kinetic energy when stimulated, either artificially or when they spontaneously appeared in special mental conditions. To this psychoanalysis we will now proceed.

Attention will be first directed to the childhood and adolescent life. The details became manifest in experi-

mental distraction, hypnosis, and through free association procedures. These methods, which have been of so much value in the functional amnesias and some sensory automatisms, also brought forth clearly the events and the mechanisms which shaped the subject's present symptoms.* It will be best to begin with the sexual experiences during the earliest days of childhood and compare these with the data of other observers. These experiences not only caused certain automatisms, but in part were responsible for the nocturnal palsy and the insomnia of her later years.

Taking up now the specific memories evoked by psychoanalysis, the first clear sexual memory was a homosexual experience. When she was about five years old another little girl of her acquaintance suggested that they imitate the sexual act. She clearly remembers the emotional reaction on this occasion, which was essentially of a sexual nature. When she was eight years old, while asleep in her parents' room, she suddenly awoke, and in the moonlight streaming on the bed, she observed the sexual act between her parents. She was afraid and yet fascinated by what she saw; her heart began to beat rapidly, cold chills ran over the body, and the mouth and tongue became parched and dry. Then her mother suddenly arose and coming to her daughter's bed asked if she were awake, to which she replied that she had been awake for some time. A similar experience was revealed in the psychoanalysis of Freud's case of Dora. Shortly after her mother's death, and after the second marriage of her father, she was compelled to sleep in a room adjoining their bedroom. In place of going to sleep, she had been so fascinated by what she had seen at one time previously, that she would lie in a half-dreamy condition, scarcely breathing, with the eyes closed and the limbs tense, so as to feign sleep, but in reality intently listening for any repetition of the previous experience. This voluntary inhibition of her muscular movements was sometimes so marked, that when she attempted to move her limbs she could scarcely do so. In reality, however, it was possible to show through further analysis that this condition

*See my papers on Amnesia and Sensory Automatisms in the various numbers of the *JOURNAL OF ABNORMAL PSYCHOLOGY*.

of muscular inhibition had appeared a year previously, during the occasion of her mother's serious illness. At that time also she would lie awake in this same tense position for hours at a time murmuring a prayer for her mother's recovery and working herself into a highly emotional state. The relationship of these conditions of muscular inhibition to the later phenomenon of nocturnal paralysis will be pointed out later. It is needless to state that both these experiences made her lose considerable sleep and were followed within a short time by the period of extreme exhaustion previously referred to. In the light of this evidence it is probable that this early neurasthenic state marked the beginning of the mental dissociation, as the exhaustion was probably of an emotional nature and not a genuine fatigue neurosis.

When she was about ten years old, a female cousin of about her age related to her one day the entire sexual and child-bearing history of women, and added that the birth of the patient was no exception to a general rule, which was equally true for her mother and the fowls in the barnyard, to which she referred. The entire story was whispered, *sub rosa*, in one corner of a piazza porch, great care being taken that their conversation should not be interrupted or overheard by the presence of an adult. The patient disbelieved the story and was very indignant at the idea that her birth was no exception to the general biological law, as she began to feel even at that early age that she was superior to other girls in birth and breeding. On the basis of a promise, she refrained from speaking of the experience for a long period. Finally she was unable to keep the so-called dreadful secret any longer and made a full confession to her mother. She was then told that the story was true. Thus, in a way her ideals concerning herself became suddenly shattered, and this was followed by a period of crying, severe headache, and extreme exhaustion. Later again she became interested in watching animals in various sexual acts. When eleven years old she fell in love with a boy a few years her senior, and in his presence she experienced the most intense emotional phenomena, such as blurring of vision, abdominal cramps, trembling, palpitating of the heart, and drying of

the mucous membranes of the tongue and lips, an automatic repetition of what had occurred some time previously in the presence of sexual matters. About this time, also, she began to play at birth and nursing fantasies with her dolls, imagined she was their mother and the dolls her living children. She remembers well the distinct sexual feeling connected with all these experiences. Later it developed that she became amnesic for these sexual experiences, and it could be shown through psychoanalysis that this amnesia was a purposeful act.

We are accustomed to think that the sexual instinct only shows itself parallel with the development of puberty, but modern analyses have shown that this feeling may make its appearance during the earliest years of childhood. These observations have also their parallel in literature and were observed by many of the poets. Readers of Dante will remember how the emotion of love appeared in the poet at the early age of nine, at the time of his first meeting with Beatrice.*

Thus it could be shown that the memories of the forgotten experiences before the age of puberty brought out by psychoanalysis showed a wide range of sexuality. There was a voluntary repression of certain sexual knowledge for which she later became amnesic, and which could only be reproduced through an artificial device. In addition, sexual curiosity, the emotion of love, the physical phenomena of the sexual act and even homosexual tendencies were well marked. Also, as in Jung's case of Anna, there was a rehearsal of birth fantasies and of motherhood in the play with dolls. This early development of the sexual emotion and of the emotion of love has also been pointed out by various observers.†

*"At that instant, I say truly that the spirit of life which dwells in the most secret chamber of the heart began to tremble with such violence that it appeared fearfully in the heart pulses." *The New Life* (Charles Eliot Norton's translation.) The analogy between this description and the somatic phenomena experienced by Miss L. is certainly striking.

†S. Freud. *Drei Abhandlungen zu Sexual-theorie* (particularly Part II, *Die Infantile Sexualität*). *Analyse der Phobie eines fünf jährigen Knaben-Jahrbuch f. Psycho-analytische und Psychopathologische Forschungen*, Bd. 1909.

Although some sexual feelings may appear in normal children, who are not and never become the victims of psychoneuroses, yet I feel that great caution must be used in the interpretation of any data secured. It is impossible to go so far as some enthusiasts have done and consider that some natural childhood habits, such as thumb sucking, are auto-erotic manifestations, a form of individual sexual excitation, from which other sexual impulses may later develop. I have observed cases in which the amnesia of childhood was successfully overcome through analytical devices, and yet it could be shown that this amnesia was not a sexual repression, and its experiences did not enter later into the formation of dreams; in fact, data were secured which demonstrated that the sexual instinct developed parallel only with the appearance of puberty. Nevertheless, the fact remains, that in some cases, particularly in some psychoneuroses, the sexual feeling can be traced back to the earliest years of childhood. This variation in the time of sexual development goes to show that although it may make its appearance at this early time, it is not necessarily an invariable infantile development, which is probably more or less an accidental occurrence. Bergson has very vividly described this conservation and repression of early childhood memories, and in the description has pertinently summarized one of the mechanisms of memory. He says, "En réalité le passé se conserve de lui-même automatiquement. Tout entier, sans doute, il nous suit à tout instant: ce que nous avons senti, pense, voulu depuis notre première enfance est là, penche sur le présent qui va s'y joindre, pressant contre la porte de la conscience qui voudrait le laisser dehors."[†]

Whether or not these precocious sexual experiences revealed through psychoanalysis were of the nature of infantile

The Origin and Development of Psychoanalysis, *American Journal of Psychology*, April, 1910 (particularly Lecture IV).

C.G. Jung. Experiences Concerning the Psychic Life of the Child, *American Journal of Psychology*, April, 1906.

Sanford Bell. The Emotion of Love between the Sexes, *American Journal of Psychology*, July, 1902.

Havelock Ellis. The Psychology of Sex (chapter on Autoerotism).

G. Stanley Hall. Adolescence, Vol. II (chapter on Adolescent Love).

†H. Bergson. L'Évolution Créatrice, p. 5.

pseudo-reminiscences which occur so frequently in hysteria and allied conditions, is difficult to determine. However, the intelligence of the subject and the feeling that the experiences revealed through psychoanalysis were of the nature of genuine revivals of personal memories, lead me to believe that the experiences actually occurred, although they may have become somewhat distorted through their prolonged latency in the subconscious and the long process of time.

The development of the nocturnal paralysis was one of the prominent symptoms showing a relation to the early sexuality, and also furnished an interesting contribution to the pathology of sleep and hypnosis. The psychology of the condition had been already pointed out by me in previous publications and the study of Miss L.'s nocturnal palsy furnished an interesting confirmation of the theories early propounded. Here it was shown that the condition appeared only in the hypnagogic state, ran parallel with it, and was of the nature of a mental dissociation reacting most strongly on the motor mechanism.*

It could be easily demonstrated that the nocturnal paralysis which later developed in this case was a hypnagogic motor phenomenon reproducing previous emotional experiences, namely, her inhibition of muscular movements in the sexual episodes and in the prayers for her mother during the latter's serious illness. The insomnia, too, was the result of this muscular tension which interfered with sleep by pouring abnormal stimuli from the muscles into consciousness.

Experimental evidence of this mechanism was also furnished when the subject was awakened from hypnosis, thus showing that the two phenomena were probably the same. For instance, after hypnosis, for a period of about thirty seconds, she would be unable to move the limbs, although the eyes could be opened. At the end of the period the condition would gradually pass off. Thus these early nocturnal phenomena may safely be regarded as identical with the later hysterical attacks of nocturnal paralysis.

*Isador H. Coriat. Nocturnal Paralysis, *Boston Medical and Surgical Journal*, July, 1907.

Some Further Studies in Nocturnal Paralysis. Dec. 5, 1907.

The early sexual experiences throw light on the nocturnal paralysis, thus tracing the origin of the latter to sexual memories.

The next complex of experiences brought out through psychoanalysis referred to her childhood life just previous to and after the death of her mother and during the time that the stepmother ruled the household. It was these experiences which also later caused many of the neurasthenic symptoms.

During attendance at dancing school she developed an affection for a boy who was frequently her dancing partner, and on the night following each lesson she would lie awake for hours and live over and over again in her mind the scenes enacted during the afternoon at school. This tendency to constant reminiscences, particularly referring to the opposite sex, was also a marked symptom of her later hysterical condition. Once during a special dancing affair, on the basis of their acquaintance, she requested the majority of dances with him, which was refused. This in connection with later experiences, in which this same boy did not take her to refreshments, was responsible for an idea which she developed after her breakdown, namely that she was not so attractive as other girls. She also remembers having overheard at the school a remark which she referred to herself, namely: "That little girl is a lovely dancer, but so homely." After that for a long period she would not even look at her photograph.

The woman who later became her stepmother had been a friend of the family and a frequent visitor. Even at this time before the marriage she developed a repugnance and hatred for her, because in her own language, "I once rushed up to her and put my arms about her, but she brushed me aside in a horrid voice, just as if I were a snake." After the marriage took place the real difficulties began. She was scolded about the most trivial matters, made to do the work of the housemaid, and at meals, if she forgot to place certain articles on the table, it was looked upon as an unpardonable sin. As a result she would stand for more or less long periods by the side of the table and mentally count the dishes and place them together in groups, in order to

avoid punishment and scolding. On these occasions her eyes would fill with tears, and as a consequence the articles on the table appeared blurred and indistinct. It was at this period that the blurring of vision first developed, which later reappeared at the time of her neurasthenic breakdown. It is a rather interesting coincidence, that in the first case of hysteria studied through the analytic method of Breuer and Freud, a somewhat similar situation developed. Here the disturbance of the eye movements and of vision could be traced to a time when the subject took care of her sick father. "The patient, with tears in her eyes, was sitting by the sickbed when her father suddenly asked her what time it was. She could not see distinctly, strained her eyes to see, brought the watch near her eyes so that the dial seemed very large, or else she tried hard to suppress her tears, so that the sick man might not see them."*

As an antidote to those unbearable household conditions, she enjoyed the frequent visits of a schoolboy who would sometimes read to her. In his presence sexual emotions would sometimes suddenly arise. Then she would play on the piano and the soothing effect of the music would bring about an abstracted dreamy state, in which the abnormal symptoms would soon disappear. This she is sure marked the beginning of the reveries and day-dreaming, which later developed to such an extent that automatisms would develop in them, with a subsequent amnesia. Her stepmother also was subject to attacks of extreme irritability, and during these times she would accuse the patient of being a disobedient child and thus causing her mother's death. Finally, for years her stepmother refused to speak to her directly, but would scold regarding her, and "when I'd go to bed, I'd lie there, almost not breathing for fear I wouldn't hear the things said about me downstairs." Her stepmother likewise wished her to marry at a very early age, in order to escape any responsibility for her education. However, she finally overcame financial and home difficulties and was able to go to school, and later to teach school, although, unfortunately, she was given classes at which other teachers had failed. It was during her period

*Clark University Lectures.

of study that some of the automatisms developed which will be described later. Finally, she was compelled to give up teaching after two years, because of an onset of neurasthenic symptoms. In 1905 she took up secretarial work, and shortly after this, the love experience began which had a great influence in shaping some of her symptoms and dreams.

Thus, in a measure, it has been possible through means of analysis to trace the fatigue, insomnia, nocturnal palsy, the sense of depression and unworthiness, the blurring of vision, lapses of consciousness, and the attacks of anxiety back to a definite origin. The experiences which were responsible for these symptoms were conserved in the subconscious and appeared, sometimes distorted, sometimes in their original form, when the hysterical dissociation took place. A marked feature was the automatic character and appearance of the symptoms, and, as will be shown later, it seems that when an emotional shock or series of emotional shocks is sufficiently powerful, an automatism will be formed at once, and there is no need to postulate a hypothetical conversion of psychical antecedent into physical symptoms.

IV.—*Association Tests and the Psycho-Cardiac Reflex*

The association tests showed markedly egocentric reactions with the usual delayed reaction time when relating to her own personal experiences or so-called personal memories.

These personal memories, which had a strong emotional tone, entered largely into the associations. These memories were of certain definite past experiences which were in the consciousness of the subject and not hidden as subconscious elements. Thus words having a strong feeling tone either caused a peculiar word reaction or a retardation in the reaction time.

Association Tests

No.	Test Word	Reaction Word	Reaction Time
1.	White	Nothing	4.2
2.	Storm	Thunder	3.2
3.	Street	F.	2.4
4.	Sled	Red Sled	4

5.	Sky	Blue	1.8
6.	Red	Nothing	4
7.	Dream	Sexual	1.6
8.	Mother	E.	3.4
9.	Sleep	Difficulty	7.4
10.	Car	Electric	1.4
11.	Sweet	Words	6
12.	Night	Calls	9.4
13.	Book	Romeo and Juliet	1.8
14.	Ring	Ruby	2
15.	Head	Bald	2.2
16.	Gold	Ring	0.6
17.	Sex	Male	2.4
18.	Glass	Window	1.8
19.	River	A.	1.4
20.	White	Family	5
21.	Ink	Black	1.8
22.	Man	Mr. X.	2.
23.	Top	Spinning	1.4
24.	Home	Winter	2.
25.	Green	Park	3.8

Analysis of the Associations

In an analysis of the associations, some are sufficiently clear so as not to require any explanation. Therefore, only those will be analyzed which showed abnormal reaction times or peculiar reactions or both.

1. White — Nothing.— Referring to the white beds which appeared in one of the dreams. Here, as in association 6, the word "nothing" meant that there was a blocking of thought, the subject's mind was a blank for the time being, and therefore no association occurred to the stimulus word.

3. Street — F.—She lived in a house on F. Street, when she was a little girl, and her mother died there.

4. Sled — Red Sled.— Referring partly to a sled which she owned when a little girl and partly to the color of a precious stone in the ring referred to in association 6.

6. Red — Nothing.— Here, as in association 1, the failure of a reaction word and the delayed reaction time were due to a disturbing complex. In this latter case the word "red" referred to the color of the stone in a ring

V.— *Analysis of the Dreams*

We will now proceed to the study and analysis of the dreams, and in the course of their interpretation many other data in the life history of the subject will be discussed. These dreams fell into two distinct classes, the hypermnesic dreams, that is, the dreams concerning the early childhood life and the symbolic dreams, some of which were sexual and some not. Sometimes the conditions overlapped, for instance some symbolic dreams contained strong hypermnesic elements. Psychoanalysis through dreams forms one of the cornerstones of the Freudian psychology. In fact, Freud expressly states that “dreams are often fragments of childhood life, and are the royal road to a knowledge of the unconscious.”*

The hypermnesic dreams were characterized by the fact that in them appeared vividly and with startling minuteness the early events of childhood. Some of these events had been entirely forgotten by the subject and were only again remembered when they appeared in dreams. In addition some of the hypermnesic dreams were repetitions of memories synthesized during experimental distraction. These hypermnesic dreams were free from any symbolism or distortion; in fact, they were mere fragmentary memories of her early childhood life reproduced in a most literal manner. In many respects the spontaneous revival of these lost memories in dreams strongly resembled in its vividness and fragmentary character my results on the experimental synthesis of lost memories in the functional amnesias. In both conditions, also, the revived memories were recognized as portions of a personal experience. For instance, she would dream of counting on her fingers, this clearly being a memory of the time when she was compelled to place the accurate number of dishes on the table, a procedure in which she was able to succeed only by this method of counting. At another time she dreamed she was in the same house where she lived before her mother's death, when she was about seven years of age. The furniture and books were very vivid and she saw her father, who chased her from

*Freud. *Die Traumdeutung*, 1909.

room to room, until she finally barricaded herself in a room against him. This was likewise recognized as a genuine incident of childhood. It is interesting to note that she stated this dream was far more vivid than she could normally visualize the same scenes.

The cause of this vividness of dreams can only be tentatively interpreted. It seems to be due to a removal or to a relaxation of the inhibition of consciousness during sleep, and consequently the dreams appear, in that same manner that memories are revived in the functional amnesias by listening to a monotonous sound stimulus which tends to inhibit the normal consciousness.

When we come to discuss and analyze dreams in which actual experiences are distorted or symbolized, we are in the presence of a far more complex mechanism. An analysis of these dreams must answer the following questions: How do they become distorted and symbolized? Is there a repression, a wish fulfillment, a disguised sexual feeling, in Freud's meaning of the term, in all these dreams? Out of what antecedent complexes are the dreams formed? What is the mechanism of the subconscious process which is active in the dream formation, and finally, what is the nature of the dream?

To a specific discussion of these questions we will return, after having reported and analyzed several typical dreams selected out of a number.

Dream I.—She appeared to be in a carriage which was being drawn by a pair of beautiful black and spirited horses. Several people whom she did not at first recognize were in the carriage with her. They were being driven rapidly, and frequently in the midst of laughter and gayety they would be jolted up and down on the uneven places on the street. Suddenly she saw Mr. X, the young man with whom she had the love affair, with her in the carriage. He seemed to take the place of one of the individuals whom she could not clearly recognize at first. It was at this point that the jolting of the carriage began to produce a sexual feeling in her, which kept growing worse and worse as the carriage kept moving faster and faster. In vain she tried to suppress the sexual feeling, part of her seemed to yield to it, and part of her seemed to fight it.

Analysis.—The “beautiful black and spirited horses” were an exact reproduction of the horses which she had seen in her early childhood performing sexual acts on a relative’s farm. The “jolting up and down,” with its later sexual concomitant, probably referred to the physical movements of coitus which she had seen in her early childhood days, and it is interesting to note that the sexual feeling appeared only after one of the individuals in the dream changed to her fiancé. The feeling of repression in the dream and the sense of yielding and yet not yielding refers to her constant emotional effort in her early childhood life to please her step-mother and to yield to her wishes. This dream, therefore, seems partly hypermnesic, although the hypermnesia is disguised and distorted, and partly of the type of a sexual symbolism.

Dream II.—She seemed to be going somewhere to remain over night. In the house which she occupied there was a room in which she saw a row of small white beds, resembling hospital beds. She started to get into one of these beds, but the sheets were icy cold and at the same time she was greatly disturbed by a fly crawling over her body. This crawling of the fly was accompanied by a nauseating, sexual feeling, and when she awoke, this feeling persisted for some time.

Analysis.—Here the physical accompaniment of the dream, the sexual feeling, was projected into the waking state. She has never been afraid of spiders or crawling things, but remembered that about a year previously a fly did creep over her skin one night and this was accompanied by a sexual feeling. Thus the dream reproduced an actual experience of a year previously, which had been conserved in the subconscious. The fly related to some fly paper, in which years previously one of the kittens which she saw in the sexual act became entangled. It was necessary to clip the kitten’s fur to release it from the fly paper, and she remembered that at the time she laughed heartily at the episode. The beds resembled the bed in which she saw the sexual experience between her parents when she was a little child. Thus the dream becomes partly hypermnesic and partly assumes the guise of a sexual symbolism.

Dream III.—She seemed to be in a rowboat at sea, with the object of diving for pearls which lay at the bottom of the water. She did not dive, however, but kept inserting her hand into the water, as if for the purpose of gathering water lilies. Instead, however, she pulled up rubies, some of which were genuine, and some of which she knew to be artificial. A young man who was in the boat with her finally dived into the water and brought up a magnificent ruby, suspended as a pendant, the whole being attached to a piece of cardboard, in the same manner that doll's pendants are sold at toy stores.

Analysis.—On the night previous to the dream she had listened to a conversation concerning pearl fishing and sapphires. This conversation occupied her mind during the next day and thus entered into the presleeping thoughts which later formed the content of the dream. For years she had wished for a jewelled pendant, and when a little girl, one of her dolls had a toy pendant. This recalls to her mind the birth fantasies with the dolls when she was a child. At present she wears a ring set with a small ruby. This was given her by Mr. X several years previously. He found the ring and gave it to her and they both wondered at the time if the ruby were genuine. He finally took it to a jeweler, who stated that he could not determine the genuineness of the stone without removing it from its setting. She would not allow this to be done and since then had often wondered if the ruby in her ring were a genuine stone. It is of interest to note that when the psycho-cardiac test was tried several months previously, that there was a marked increase in the pulse rate when the word "glass" was given as an indifferent word. This could not be interpreted at the time, but the entire reaction was later clearly explained through the analysis of this dream. In other words the entire experience and mental conflict remained actively in the subconscious, in one case causing a physiological reaction, in the other, it entered into the content of the dream. The word produced no lengthening of reaction time in the association test. This phenomenon has been pointed out by me in other published analyses. It demonstrated that test words which may cause no mental retardation when relating

to conserved experiences of which the subject is not aware, may produce a physiological reaction of the nature of an increase in the pulse rate.* Thus this particular dream was principally a disguised sexual symbolism and mental conflict — the wish fulfilment in the dream being purely incidental and secondary.

Dream IV.— She seemed to be in a hotel which stood at the edge of a park. Along the front of the hotel was a board walk, which terminated in a steep cliff. She was sitting on the veranda and a hammock swung in front of her. Then some people arrived at the hotel, accompanied by several large trunks. She then started to run inside through the various hotel corridors, as she seemed to be ashamed to be seen by the newcomers. After a time she returned to the veranda and sat down, and an old man came and sat next to her. The chairs were placed behind the hammock and she allowed her chair to rest on the edge of the hammock and kept making back and forth movements on the chair. She seemed to be afraid to sit on the hammock, because in the dream she remembered that when a child a hammock once broke while she was sitting in it. Finally, she and the old man stood up and faced the building, on the side of which at each end of the roof in an effort at decoration there was something which resembled an ostrich plume with an Indian's head beneath. In a conversation which followed, the man insisted that the decoration resembled the broad ribbons with which little girls tied their braids. Then they turned round and the hammock seemed to have changed to a settee on which sat a man and woman. The man seemed to be her father and the woman her stepmother. Suddenly a man rushed out and pushed the settee and it went with great speed down the veranda to the board walk. Because she knew there was a steep cliff at the end of this walk, she screamed and held her breath, waiting for the catastrophe to happen. Then it suddenly seemed as if it were the following day and she was reading a newspaper account of the catastrophe which stated as follows: "Since

*I. H. Coriat. Psychoanalysis of a Case of Sensory Automatism, *JOURNAL OF ABNORMAL PSYCHOLOGY*, Vol. V, No. 3, 1910. *Ibid.*, pp. 163-173 (The Case of Miss F., A Complex Hysterical Dissociation).

then the small and insidious tail of sulky or surly obstinacy in this man's behavior has made the people fear for his sanity and fear that he meant to kill."

Analysis.—This is a very curious dream, and while its analysis presents certain difficulties, yet the essential elements are clear. The movements in the chair were the same movements as in the carriage during the dream previously related. The first year of her betrothal she wore a large hat with ostrich plumes, thus connecting this idea with the betrothal. For years she had often entertained a certain transitory thought concerning her parents, but because it was incompatible with her personality, she immediately repressed it. In this thought she wished her father and stepmother were dead, in order that she might be free to do as she liked. Thus a repressed complex appears in this dream, which also symbolizes the unconscious wish fulfilment of years. Concerning the Indian's head, she remembers how she enjoyed stories of frontier life when a little girl. In one of these, the father of the heroine married a half-breed and savage Indian woman after the death of his first wife. At the time the sexual idea of the mingling of white and Indian blood fascinated her. Thus, in a way, did the dream symbolize her father's second wife, who because of her treatment of the patient was often referred to as "savage." The newspaper account is a beautiful example of dream hypermnesia and dream displacement, such as occurs in imaginative dream literature, particularly "Alice in Wonderland."

Dream V.—She seemed to be in a trolley car with her stepmother. The car was entering a tunnel and the conversation turned about the repair of a couch cover at home. She was conscious of an effort to please her stepmother, and seemed to be in a state of repressed excitement from that effort. As the car was crowded they were both compelled to stand, until finally some one left the car and she started to secure the empty seat for her stepmother. As she was about to do so, a gaily dressed girl of about thirteen years of age pushed ahead of her and took the seat. Thereupon she entered into a quarrel with the girl for her rudeness, and in the quarrel several other women in the car joined and sym-

pathized with the young girl. In the midst of it all, her stepmother disappeared before her eyes, she seemed to vanish into the air. Thereupon, she became so frightened that she hurriedly left the car. One of the women followed her and her actions seemed to indicate that she was attempting to make her disappear in the manner of the stepmother.

Analysis.—Here again hypermnesic elements enter, as the couch cover was one that was in the sitting room during her early childhood. The constant effort to please and the state of repressed excitement is a recurrence of her childhood emotional state during the difficulty with the stepmother. Free associations for the remainder of the dream brought out the following latent content. The sudden disappearance of the stepmother reminded her of magic, of certain episodes in the “Arabian Nights” and in German fairy tales. This in turn brought to her mind how in these legends persons could be made to disappear or to change into other beings, in the same manner that Circe changed the sailors of Ulysses into swine. This recalled to her mind another adventure of Ulysses, the adventure of Scylla and Charybdis, which symbolized to her that at home, during the reign of her stepmother, she was constantly steering between trouble to keep peace and remain neutral and thus avoid danger in the manner that Ulysses attempted to sail safely between Scylla and Charybdis. She was constantly reminded at home by her stepmother that she was worse than any other girl and during these years she repressed her real feeling towards her stepmother and tried to live up to certain ideals. This repressed mental attitude was clearly reproduced in the dream. Her stepmother constantly spread stories about her ill behavior to the various friends whom she visited. These friends would remark about these stories in her presence until she felt that she was being “hounded by all my acquaintances into unreality.”

In analyzing these dreams and tracing out the mechanism which was responsible for the material of the dreams, we see a certain law and order. The dreams were not chance phantasmagoria of thought disturbing sleep, but were really the logical result of conserved experiences. These experi-

ences predetermined the content of each dream, as could be demonstrated through psychoanalysis. Some of the experiences extended far back into early childhood, others occurred during adult life, or were the pre-sleeping thoughts of the subject. Some of these experiences were subconscious or unconscious and only appeared in the dreams, in particular certain events of childhood. Still others were the conscious thoughts of the subject. Many of the dreams were disguised sexual thoughts, referring to past sexual experiences, or were the distorted mental conflicts during the time the subject lived under the terror of her stepmother. In only a few of the dreams could a distinct wish fulfilment be traced, and here it was not the main motive of the dream, but merely secondary and incidental.

The imagery of the dreams was markedly stereotyped, certain motives appeared with startling repetition in each dream. These dream complexes related to five different groups of experiences in the life of the subject. These complexes were:

1. The attitude towards her stepmother.
2. Her experiences with her father.
3. The various sexual ruminations and episodes of childhood.
4. Her betrothal.
5. The actual events of childhood.

The material out of which the dreams was woven had been conserved in the nervous system in the same manner that all memories are stored up. Some of these memories could be revived by conscious effort, others appeared in a literal or disguised manner only in the dreams. Only a few elements of the dreams, such as the mental conflicts relating to her parents, or her early sexual experiences, could be traced to the relaxation of a waking censor during sleep.

The somatic symptoms of the dreams were interesting and could be divided into four distinct effects:

1. A persistence of the sexual feeling experienced during the dream.
2. Fatigue.
3. Depression.

4. A more or less protracted inability to move (nocturnal paralysis).

This persistence of various dream phenomena after awaking also occurred in Prince's recently analyzed case, and is interpreted by Prince as due to the continued activity of the same subconscious process which produced the dreams.* In my case also it was very probable that the same subconscious mechanism was at work.

During the waking state of the subject the censorship was marked. She continually repressed sexual thoughts and mental conflicts relating to past experiences, except in the cases where an amnesia existed for these experiences. In sleep there was a relaxation of this censorship and the experiences reappeared, either literally, as in the hypermnestic dreams or distorted, as in the symbolic dreams. This relaxation of censorship, however, occurred only in those few elements of the dreams as previously indicated. The transformation of the latent into the manifest content during sleep was an intellectual and not an automatic process in the same manner that mathematical problems were solved during sleep by the same subject. Sometimes the latent content alone became hypermnestic, without any transformation into a manifest content.

We have been enabled to trace out those essential elements which gave the dreams a logical meaning, thus determining the cause of the dream, its mechanism and its meaning. The method used in the psychoanalysis of the dreams was essentially the technique devised by Freud — namely free association in an uncritical attitude of mind. Through this method the dreams were reduced to an intelligible order, whereas previous to psychoanalysis the underlying complex became manifest only in a distorted form. Our analyses confirm Prince's recent observations, in which it was shown that while the dreams may express the fulfilment of a wish, they also may be the expression of its non-fulfilment, of mental conflicts, fear, anxiety, emotional

*Morton Prince. *The Mechanism and Interpretation of Dreams*, JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. V, No. 4, 1910. (This paper contains a very trenchant and skilfully analyzed criticism of Freud's theory of dreams.)

aspirations, and may make use of as material, not only childhood experiences and emotions, but also the pre-sleeping thoughts of the subject. The dream analyses also showed some conflict with censoring thoughts.

The transformation of the latent to the manifest content or the dream-making itself, is a complex sub-conscious process of whose mechanism no solution can be offered at present, excepting perhaps that the process is essentially an intellectual one and not a mere physiological automatism. These subconscious mental processes in dreams are exceedingly active and therefore did not protect sleep, but rather disturbed it. As in Prince's case also many of the dreams, which on awaking could be remembered only in a fragmentary manner, could be recovered in their entirety by means of either hypnosis or experimental distraction. All the dreams conformed to the mental makeup of the subject and were markedly individualized. They were derived from those mental processes which were of the greatest personal interest to the subject, and were never mere trifles. Although the sexual emotions could be traced back to early childhood, yet only a few elements of the dreams could be interpreted as arising from these early sexual experiences.

Thus, in a way, our analyses partly corroborate and partly fail to confirm Freud's theory of dreams, because the element of wish fulfilment in the dreams was secondary and incidental, and did not form the main motive of the dream. It appears to me that dream analysis through free associations may be carried to a point where the findings may be distorted into a meaning usually prompted by the personal enthusiasm of the analyzer. In fact, if one is not careful, meanings may be read into the analysis of a dream, which the manifest content of the dream does not corroborate or warrant. While the great value of Freud's work lies in the marshaling of the heterogeneous elements of a dream into a certain law and order, yet one must be cautious in the interpretation of dreams and not carry the analysis to a point where logic and reason are replaced by the analyzer's imagination. A dream may be so distorted through carrying the analysis too far as to mean almost anything. In my

analyses I have sought to avoid this, while at the same time using Freud's technique, and thus the results of the dream analyses presented a certain logical underlying motive which ran through each dream. There is no doubt that the analyses could be carried still further, but it was felt that if this were done, something would be read into the dreams not warranted by the content of the dreams themselves.

VI.—*Automatisms*

That the condition in this subject was due to a dissociation of consciousness is shown by other data. Certain automatisms developed, such as absentminded acts with conservation of the memories for these acts, hallucinatory phenomena and the solving of problems by secondary consciousness. It could be shown that all these phenomena were evidences of an active subconsciousness and were not unconscious automatisms unaccompanied by thought.

While teaching school there frequently developed absentminded periods, in which she would carry on her school work for a short time, but afterwards could not recall what she had said or done. On still other occasions, in her earlier life, before she began to teach, she would frequently retire with an unsolved algebra or geometry problem on her mind and would awake in the middle of the night with the problem solved. She also distinctly remembered that one day while trying to solve a catch problem in arithmetic she put the work aside and allowed the block of paper with the pencil in her hand to rest on the knee. Then, after a short time, without any conscious thought or volition, the hand automatically wrote on the paper the solution of the problem. These incidents were testimonies to the ease with which mental dissociation took place in the subject. The solving of mathematical problems is evidence of an active consciousness in the subject during sleep, very likely the same subconscious process which transformed the latent content of a dream into the manifest content.

The absentminded acts and periods, with the conservation of the apparently lost memories, are also evidences of mental dissociation. It could be shown on analysis that

many of the absentminded acts followed rapidly on a transitory sexual thought. For instance, in one of these lapses of consciousness she was writing a letter. Suddenly she found that she was using a strange bottle of ink which she remembered having seen some time previously in a desk in the same room, which at the time was locked. In hypnosis she remembered going to this desk, fumbling with the desk cover with her finger nails and finally unlocking the desk and taking the ink bottle.

On still another occasion, while at a railroad station a sexual thought suddenly took possession of her. At her next recollection she found herself in a wrong train, entering a station several miles from her home. In experimental abstraction fragmentary memories of these amnesic periods were obtained, as follows: "I guided my way along and I remembered being on the train. The brakeman came for my fare, but he did not appear to be my regular brakeman. I paid but little attention to him and gave him my ticket, I did not even notice that I did not know people in the car. Just before we reached the station I found that I was in the wrong train. I see and yet I don't see during these spells, and I am liable to lose things in them and find myself in places where I had no intention of going." These lapses of memory remind me of the tricks played by the irrepressible "Sally" upon Miss Beauchamp, both conditions being a splitting of consciousness.

Occasionally the subconscious automatisms took the form of hallucinations. These hallucinations could be demonstrated to be conserved experiences, which had undergone a certain distortion through what may be termed subconscious incubation. This origin of hallucinations from subconscious complexes also took place in another of my reported cases.* These hallucinations only occurred in the pre-sleeping period of the subject or during one of her day dreams.

For instance, weird faces would distort themselves and grin at her; changing, colored geometrical figures, like the figures in the kaleidoscope, would appear before her eyes;

*Isador H. Coriat. *The Psychoanalysis of a Case of Sensory Automatism*. JOURNAL OF ABNORMAL PSYCHOLOGY, August-September, 1910.

on one occasion in a daydream she saw a row of slate-colored pigeons. These hallucinatory phenomena could be definitely traced to the following antecedent complexes. Many of the faces resembled the expressions of her father and mother during the subject's early childhood. The kaleidoscopic hallucinations could be traced to an experience when the subject was three years of age. The hallucination of the slate-colored pigeons, through the method of free association, could also be traced to stray sexual thoughts which it is not necessary to relate here. Thus the hallucinations like the dreams were not due to chance, but a disturbing mechanism was at work in the subject's subconscious mental life, that is the autogenetic influence of the subject's own thoughts.

Another interesting evidence of mental dissociation were the sensations of disturbances in the body coenesthesia. These disturbances, which resembled some phenomena of psychasthenia, were described as follows: "A very sharp change came at my mother's death and I often wondered if I were the same person"; "I feel divided, as if there were two of me, as if I were here and as if I were somewhere else"; "as if my brain and spinal cord were being stirred up with a spoon and escaping."

VI.—*Mental Mechanism of the Condition*

Only a brief summary will be given, as many of the mental mechanisms have already been discussed in the course of the analysis. The subject's dreams, neurasthenic symptoms, absentminded acts, automatisms, etc., could all be definitely traced to certain conserved complexes. Some of these complexes were recent, others dated back to the earliest years of childhood. No symptom, dream, or hallucination was due to chance or accident, but a directing subconscious mechanism was constantly at work. Many of the symptoms disappeared after a complete analysis, others remained, due to the subject's tendency to indulge in reminiscences of the past, in particular, highly emotional experiences. On this basis arose a certain amount of automatism. Thus the psychoanalytic technique had succeeded in tracing

to a definite source the manifold symptoms of the subject and demonstrated how they all arose from experiences conserved in the central nervous system. So far as I was able to demonstrate, none of the symptoms arose in the dreamy, hypnoidal condition upon which Freud lays so much stress in his theory of the psychogenesis of hysteria. Hypnoidal states did occur in the subject, but these states were purely symptomatic and none of the symptoms originated in them.

Except in the dreams there was no distinct conversion of an antecedent psychical into a physical symptom. In fact, each hysterical symptom was at times an exact, at other times a partially disguised repetition of the original emotional experience which produced the symptom. Thus, an automatism analogous to the automatisms found in some of Pawlow's and Nicolai's experiments on animals* satisfactorily explained the persistence of the symptoms, and there was no need to postulate a hypothetical conversion. No matter how far the analysis was carried, it was impossible to demonstrate the conversion of a psychical antecedent into bodily symptoms. In fact, when the bodily symptoms took place, they were at once perceived and formed a part of the original emotional trauma. While some of the symptoms disappeared after a complete psychoanalysis, yet others persisted, although the analysis was equally complete. Therefore, it seems that it is not always true that individual hysterical symptoms disappear if one succeeds in thoroughly awakening and giving free play to the memories of the causal process with their accompanying emotion. Undoubtedly another mechanism is at work which prevents the disappearance of the symptoms, and this mechanism appears to be the automatic character which the symptoms have assumed.

It seems that when an emotional experience or a series of emotional experiences is sufficiently severe, that an automatism is formed at once, from the very beginning of the experience. This automatism assumes the char-

*J. P. Pawlow. *The Work of the Digestive Glands*, 1910.

G. F. Nicolai. *Die Psychologische Methodik zur Erforschung der Tierpsyché*, *Journal f. Psychologie u. Neurologie*, October, 1907.

acteristics of the bodily and mental symptoms caused by the original emotion. To a dissociation of consciousness, therefore, there must be added the element of automatism to explain the persistence of certain hysterical symptoms, even after a complete psychoanalysis. These automatisms exist in a latent but very active state in the subconscious mental life, and, under conditions which are at present not clearly understood, perhaps through some process of association, suddenly break through, and thus cause the persistence of certain hysterical symptoms. The therapy of such conditions is not only a relief of emotional tension through psychoanalysis, but it depends upon whether or not the automatic process can be brought under the domain of the will.

The hysterical mechanism in this and in many other cases which have come under personal observation seems to be a dissociation of consciousness with the formation of automatisms. These automatisms are due to the influence of certain conserved experiences with their accompanying affects, for the greater part of which there is an amnesia of reproduction, but which can be revived through the technical devices of psychoanalysis because there is no disorder of conservation.

The value of the analytic method lies in the fact that one is able to discover suppressed material, and thus establish a definite psychological connection between symptoms and repressed experiences, a real continuity in the psychic series. The entire psychical complex may be constructed through the data furnished by psychoanalysis. All the heterogeneous symptoms thus fall into a certain law and order. It is here that the great value of Freud's work lies, in demonstrating that mind is a phenomenon, and that its manifestations follow definite laws of cause and effect, as in the physical world. The subconscious thus becomes a symbol, a working hypothesis, in the same manner that certain mathematical signs are symbols, or the conception of an all pervading ether in physics. It is extremely doubtful, however, after a suppressed complex has become automatic, if this complex is deprived of its baneful influence after it has been brought to the surface and the subject faces the mental conflict which had been previously avoided by repression.

ABSTRACTS

THE HARVEIAN ORATION ON EXPERIMENTAL PSYCHOLOGY AND HYPNOTISM. Delivered before the Royal College of Physicians of London, Oct. 18, 1909. By *George H. Savage, M.D., F.R.C.P.*, London. Henry Frowde.

DR. SAVAGE's oration is of interest to American science, not because the address makes a substantial contribution to our knowledge of experimental psychology or of hypnotism, but because it may be regarded as indicative of the stage of development psychotherapy has attained in Great Britain.

About half of the oration is devoted to a sketch of Harvey's life and times. Seventeenth-century England contributed little intelligence to medical science. The separation of the medical profession from the enervating control of the church had only begun, with the result that human ailments were still given a "spiritual" interpretation, and their cure was still sought in charlatanism, legerdemain, and witchcraft. Priest physicians exorcised spirits; "moss grown from scalp or skull of a thief was made into an ointment"; the barber surgeons who had become independent of the "grocer's company" succeeded in having adopted as sound therapeutics the practice of applying "salve not to the wound, but to the weapon by which the wound was made"; the insane were treated with "a dark house and a whip." Harvey, who because of his independent methods of investigation and the originality of his theories, was regarded by his reactionary contemporaries as a crackbrained iconoclast, and who, notwithstanding this fact, displayed unceasing tolerance, was like an oasis of exemplary fertility in a desert of ignorance and superstition. Despite his truth-stifling surroundings, he concentrated his energies in the service of science with unflinching industry and unusual singleness of purpose. He had but one aim,—to know Nature, and but one principle,—to believe all those conclusions, and only those to which his reason led him.

Such open-mindedness Dr. Savage urges his profession to entertain toward experimental psychology and hypnotism. Too prevalent is the feeling among British physicians "that experimental psychology is hardly likely to reward those who are devoting their lives to it, and that men of promise are wasting their energies on what will be of little service either to psychology or to medicine." Too general he finds the belief that hypnotism is some sort of "faith cure." Experimental psychology is of importance. It has gotten far beyond its elementary stage, when

"the work of the experimental psychologist had the aspect of social games" — such as "tests of memory and of verbal association," and has come to a more advanced stage in which "important observations on physical and mental reactions take place." Indeed, experimental psychology has accomplished two valuable results: "It has shown how to measure definitely the reactions of the senses to their surroundings, and at the same time it has shown us how readily some of the senses may be deceived, leaving us with an open mind for things at present undefined."

Hypnotism, which Dr. Savage apparently regards as synonymous with psychotherapy, he believes of general scientific interest and of particular value to medicine. The objection that hypnotism is "mysterious" he dismisses as irrelevant, inasmuch as all treatment contains for the patient an element of inexplicability. Nor does he believe hypnotism dangerous, except when incautiously used upon highly neurotic people. When used intelligently Dr. Savage regards hypnotism as a valuable therapeutic agent. It may suspend or heighten physical sensibility. It has been used successfully to influence the action of the muscles, the heart, the lungs, and to produce peristalsis of the bowels. It is an aid in any attempt to stimulate such mental functions as the memory. It induces sleep; it alleviates pain; it assists in surgical work. "Nervous disorders that do not depend upon organic brain disease, those mental disorders that are purely functional, and such as do not cross the insane border line" lend themselves to hypnotic treatment. The speaker cites a few cases in which hypnotic treatment removed nervous disorders and mental obsessions. A middle-aged gentleman, whose father had had senile dementia, and who, after "a severe and exhausting moral strain," had become subject to an overpowering dread of insanity, to depression, and to weakness of will, was readily cured by Dr. Bramwell. Suggestive treatment proved successful in the instance of an elderly woman who, after losing her second husband, began to have the delusion that her first husband's name appeared on her visiting card. The most complicated case referred to is that of a highly intelligent young woman whose mother suffered from hysteria, and who manifested the same ailment after overworking for an examination when she was thirteen years of age. Despite the careful attention of a neurologist who employed only physical remedies her condition grew steadily worse, until she had "frequently attacks of the true Salpêtrière type of *grande hystérie*." Three months' hypnotic treatment by Dr. Savage restored her to normal health.

The aim of this oration — to dispel the conservatism that befores the British medical mind, is certainly commendable. The

substance of the address, however, is rather meager. In the treatment of experimental psychology no distinction is made between the abnormal and the normal branches of the science. No mention is made of the many facts established by the researches of Bernheim, Binet, Janet, Freud, Prince, and Sidis in the one field, or of Wundt, James, Ebbinghaus, Lange, Münsterberg, and Titchener in the other. All that we find are a few matter of fact statements about the privacy of one's mental states or the fundamental unity of the sensations, which statements, in addition to being commonplace, are so scant in content as to total but four out of the forty-four pages that comprise the printed copy of the oration. The section on hypnotism, though more extensive than the one on experimental psychology, is largely historical or generally descriptive in nature. Dr. Savage endeavors to emphasize the therapeutic importance of hypnotism. But so embryonic does the development of psychotherapy in Great Britain seem to be that he appears to regard hypnotism as the sole psychotherapeutic agent. He shows no familiarity with Freud's psychoanalysis or with Sidis's hypnoidal treatment. And the cases he cites are for the most part the ones that the average Continental and American psychopathologist meets in his ordinary experience.

The condition of psychotherapy in Great Britain, judged by this oration, is little short of deplorable. It is not that Dr. Savage is not sincere and open-minded enough. The difficulty is with the rank and file of the profession who are so conservative that a Harveian oration must degenerate into a plea that scientific men should not reject new truth, simply because it is new. May his sincerity fertilize the sterile soil upon which he has strewn rather unpromising seed!

M. J. WESSEL.

EXPERIMENTAL RESEARCHES UPON SOME ELEMENTARY PSYCHIC PROCESSES IN HYPNOSIS (RECHERCHES EXPERIMENTALES SUR QUELQUE PROCESSUS PSYCHIQUES SIMPLES DANS UN CAS D'HYPNOSE). By Ed. Claparede et W. Baade, *Archives de Psychologie*. Vol. VIII, July, 1909.

WHILE there have been a large number of studies upon the psychological mechanism of hypnosis, yet only a few of these have been made solely and systematically for the purpose of investigating the mental processes in the hypnotic state, such as memory, attention, judgment, ideation, and reaction time. This neglect will not appear so strange if we recall the fact that it is but little more than thirty years since hypnosis has been taken out of the

realm of a mental curiosity and investigated scientifically. Even the lack of exact psychological research up to the present is easily understood, if we remember that in presence of such an extraordinary mental phenomenon as that of hypnotic sleep, attention has been concentrated principally upon its most striking manifestations, such as suggestibility, catalepsy, hallucinations, amnesia, automatism, and splitting of the personality, while the more exact investigations have been neglected. This minute and extensive research is, therefore, devoted entirely to these neglected phases of the psycho-physiology of the hypnotic state.

The subject was a woman, forty-two years of age, who showed certain so-called mediumistic phenomena. In childhood she manifested an abnormal tendency to sleep; later in adolescence, there developed sensations of constriction in the throat, but without other hysterical manifestations. Automatism, in the form of automatic writing, developed shortly after the age of fifteen. This ability to do automatic writing increased by practice, and parallel with it, certain other nervous disturbances appeared, such as insomnia and depression. As she was very suggestible, these nervous disorders were cured by a so-called "magnetic healer." During adult life the mediumistic tendencies increased and assumed the form of automatisms, dreamy states, clairvoyance, telepathy, and a claim of ability to move objects at a distance. This latter corresponded to what Flournoy termed "telekinesis," in his case of Mlle. Hélène Smith. This claim of the subject could not be confirmed by exact experiment. Through continued automatic writing and hypnotization, a certain splitting of the personality gradually took place, such as has been noted in other peculiarly suggestible subjects, such as in Mrs. Verrall, or in the reviewer's case of Mrs. Y. (*JOURNAL OF ABNORMAL PSYCHOLOGY*, pp. 216-232).

The subject was easily hypnotized. Where a series of exact experiments is about to be carried out, it is necessary to describe the variety and state of hypnosis. Hypnosis is classified usually according to its depth or to the appearance or non-appearance of somnambulism. If hypnosis is a form of mental dissociation, how should this dissociation be measured — according to the memory, that is the presence or the absence of amnesia — according to the automatism that develops, or according to the intensity of the suggestibility? This question is an important one, because the various phenomena of the hypnotic state are not parallel to one another. Hypnosis also varies according to the individuality of the subject, and this again complicates the question.

The only way out of the dilemma is to describe the various

manifestations of the hypnotic state. Claparède's subject showed seven different manifestations, namely: (1) Automatism. (2) An intermediary state just before going into hypnosis. (3) The hypnotic state itself, in which the subject was quiet, with a feeling of heaviness, an inability to move the limbs or open the eyes, light catalepsy, a diminution of cutaneous sensibility and amnesia. (4) A dreamy "traveling delirium" (*L'état de voyage*), which appeared if the subject was left to herself, more profound than the ordinary hypnotic state, with amnesia on awakening, but with an ability to recall the details in a subsequent hypnosis. (5) A state of mediumistic phenomena. (6) Alteration of the personality. (7) A complex state, which appeared to be a mixture of all these. The experiments were all carried out, while the subject showed the manifestations comprised under number three — that is, an ordinary hypnotic state.

The literature on reaction time in hypnosis contains many contradictions. Some observers found it slowed—others lengthened. According to Claparède, this discrepancy in results is due either to a lack of uniform technique or to a too small number of experiments. The object of the present research was to eliminate these factors of error as much as possible. A special modification of the Hippchronoscope was used. The experiments were carried out both in hypnosis and in the waking condition; as a control, a perfectly normal laboratory student was used. In both cases, any element of suggestion was carefully avoided. The results showed in the subject that for simple reactions there was no difference of time between waking and hypnosis. In the control, however, the reaction time was somewhat longer in hypnosis. For discriminative reactions in the subject, the time was somewhat longer in hypnosis than in the waking. This was inconstant, however. In choice reactions there was a shortening of the reaction time in hypnosis.

A disturbance of memory is one of the principal phenomena which characterize the passage from hypnosis to waking or vice versa. Certain memories preserved in one of these states are liable to persist in another. This phenomenon of persistence or continuity of memory Claparède calls *diamnesis*. This *diamnesis* is *hypno-vigil*, if a memory, fixed in hypnosis, appears, can be reproduced, or can be recognized in the waking state. A *diamnesis vigil*o hypnotic has an opposite meaning. Recognition and reproduction, however, are not the only signs of the persistence of a memory. To these must be added economy and inhibition. An association may be too feeble to be reproduced alone, yet it may manifest itself by the fact that it takes less effort to memorize

it anew. This is economy in memory. When an attempt is made to memorize a new fact, this will be found more difficult if at the same time other unrelated facts are in the mind. This is inhibition — one group of unrelated memories inhibits the conservation of a new impression.

Because of the minute and elaborate manner with which the memory experiments were carried out, it is exceedingly difficult to describe them within the limits of an abstract. In brief, however, the method used for these experiments was to have the subject memorize a series of ten couplets, each composed of a number and a nonsense syllable. The syllables were varied in the different experiments, while the numbers remained the same. The presentation of the series was auditory and not visual, as the eyes of the subject were naturally tightly closed. It was found that the series given in hypnosis could be learned anew in the waking state with much less effort than was required for the original acquisition, thus showing an economy of memory. These same series made it more difficult for the subject to learn other groups of numbers and syllables anew in the waking state, thus demonstrating what Claparède terms an inhibition of memory. Therefore, these memory experiments in hypnosis showed that there existed a hypno-vigil economy and inhibition, and that there was a strong tendency to associate activity in hypnotic memory. That is to say, experiences required in hypnosis, for which the subject was amnesic in her waking state, could be learned anew in this waking state with less effort than if they never had been stored up in hypnosis. The same could be applied to the phenomena of inhibition; one group of unrelated memories acquired in hypnosis, for which the subject had no memory in her waking condition, inhibited the acquisition of new memories in the waking state, showing that experiences acquired during the peculiar brain condition of hypnosis left strong traces.

The association tests were tried at long intervals, because the subject could recall in hypnosis the association and test words of the waking state. It was found that hypnosis tended to shorten the associative time reaction. In the arithmetical tests (addition) there was no appreciable difference between waking and hypnosis.

As a result of these elaborate experiments Claparède drew the following conclusions: He admits that the researches are preliminary, and therefore a psycho-physiology of hypnosis derived from these is merely tentative, and open to modifications and corrections in the light of further investigations. A complete and final theory of hypnosis must furnish an answer to three questions, viz.:

1. What is the condition of the nervous system during hypnosis?

2. What is the relation between this condition and the various symptoms of hypnosis?

3. Is there any relation between the nervous system in hypnosis and the means used to provoke hypnosis?

When it is stated with Bernheim that hypnosis is suggested sleep, nothing is said concerning the real nature of the condition, but we formulate simply an hypothesis as to its probable origin. Bernheim (*Hypnotism*, 1903) claims that there is no such thing as hypnosis, but that the state called such is merely a placing into activity a normal function of the brain,—namely suggestibility. Or to state it a little differently, hypnosis is merely a psycho-physiologic brain state, in which this suggestibility comes into the foreground of activity. In this state the brain condition actually differs from that in which suggestibility is absent, or is not placed into activity. Verworn also considers hypnosis as a waking state with increased suggestibility.

The theories of hypnosis may be divided into two groups, viz.: the physiologic, which interprets hypnosis as a form of cerebral inhibition (Wundt, Grasset, Vogt, McDougall), and the psychologic, which looks upon it as a splitting of the personality (Janet, Dessoir). There appears to be no essential difference between these theories, except that one is expressed in physiological terms and the other in psychological.

According to Claparède, the disturbances of reaction time in his hypnotized subjects may mean one of several things, viz.: the nervous conduction is shortened; increased motor inertia; there may be a disorder of attention in hypnosis; or there may have been a state of muscular rigidity which made the movements more difficult. The results of these reaction time experiments do not harmonize with the theory of cortical inhibition, because if this were present, there would be a constant shortening of the reaction time, a result which did not take place. Of course it might be objected, that the cerebral regions which produced the reactions during hypnosis were not within the field of inhibition. This would postulate only a partial inhibitory influence of the cortex. Or if hypnosis is according to one theory an inhibition of the inhibitory centers, thus causing an increase of reflex excitability, there would be a constant increase of the reaction times, instead of a shortening, as some of the experiments showed.

The memory traces stored up in hypnosis have for a given group of impressions the same substratum as the traces acquired in the waking state. Why, then, the inability to reproduce these

traces in the waking state? Claparède answers this question by showing that in post-hypnotic amnesia the difficulty is not the presence or absence of a given memory, but the real difficulty lies in the inability to recall it. In other words, it is an amnesia of reproduction and not of conservation. But why is the waking subject not able to reproduce memories acquired in hypnosis? This is probably due to a certain modification of the personality which takes place in hypnosis, and therefore in the waking state there is an absence of recognition, an ineffectual act of synthesis. This explanation, however, as Claparède himself admits, explains nothing, as it leaves unanswered the real reason for the rupture of continuity between hypnosis and waking.

The quantitative results of some of the association tests (a shortening of the association time in hypnosis) harmonize to a certain degree with the theories which claim an inhibition of the associative activity in hypnosis. Yet if we analyze individually the associative experiments, we will find them in some cases as short in waking as in hypnosis. This shows that the theory of motor inhibition is insufficient, because if an inhibition of association is favored by hypnosis, it does not mean, on the contrary, that the hypnotic state is entirely an inhibition. The qualitative results of the association experiments contradict the inhibitory theory, because there is no difference between the grouping of ideas in hypnosis and waking. The arithmetical tests led to the same conclusion.

But are we to deduce from all this that there is no difference between the mental activity of a waking subject and a subject in hypnosis? This question must be answered in the negative, because the associative processes are far from comprising the entire mental activity. There is in hypnosis a sort of mental reduction — but a reduction in depth and not in extent.

Hypnosis is also characterized by a suspension of the function of the initiative. But this suspension of initiative does not appear to be due to a diminution of the cortical excitability. Discrimination is less active in hypnosis, and this in part may explain some of the disturbances of the associative activity. The reflex inhibition of hypnosis resembles somewhat that of sleep. It is also analogous to the inhibitory functions of defence in the lower animals. This inhibition in hypnosis does not comprise all the mental functions, but it is selective and limited to one function, that of initiative. What are the effects of this suspension of the function of the initiative and can all the phenomena of hypnosis be explained by it? The increased suggestibility is probably due to a lowering of the initiative. But doubts have recently been cast

upon the idea that suggestibility is the essential element in hypnosis.

The question is probably more complex than was formerly believed, because at times Claparède's subject was more suggestible in the waking state than in hypnosis. In fact, in one experiment in the hypnotic state (temperature experiment) she was rebellious to all suggestion. In association, too, she was more original in hypnosis than in the waking state, which appears to signify that she was only slightly influenced by the associations made in a previous waking state, which, of course, were clearly remembered. A final and complete theory of hypnosis is therefore impossible from analysis of the present material.

I. H. CORIAT

MENTAL PROCESSES AND CONCOMITANT GALVANOMETRIC CHANGES. *Daniel Starch, Ph.D. Psychological Review*, 1910, xvii, pp. 19-36.

THE author deals with the amount of galvanometric changes produced by several different mental and physical states of the subject, "whatever the ultimate cause of these changes may be, whether it be in the resistance of the skin or in the variation of other functions." The normal curve, with the subject as passive as might be, "runs along by small zigzags on the same general level." The voluntary muscular work of lifting the right knee rhythmically showed a decreased resistance as soon as the work began; but the rhythm of muscular contractions was not represented by a concomitant rhythm of the deflections. The decrease in resistance was gradual and maintained. Ten subjects were experimented on. The voluntary mental effort of fixating a spot in the visual field while attending to capital letters presented in the peripheral visual field (here the muscular activity was assumed to be slight) produced a general decrease in resistance of the body, but this was less than in the case of lifting the leg (eight subjects). The automatic mental activity of repeating to oneself, without audible articulation, easy portions of the multiplication table gave very little change in the galvanometric readings — a decreased resistance represented by only .17 cm. deflection. But if the same matter was audibly articulated a much greater decrease was shown by a deflection of .67 cm. "Apparently the difference was due to the additional exercise of the muscles involved in speaking" (eight subjects). It was concluded that "automatic mental activity produces less change than

voluntary mental activity" (attention to the peripheral field of vision). Unexpected stimuli given to a passive subject evoked an emotional state (surprise) which the subjects were able to estimate as weak, medium, or strong. The average deflection for all cases in which the emotion was described as weak was .25 cm.; for all described as medium, .52 cm.; for all described as strong, .62 cm. Thus the stronger emotion gave the greater decrease in resistance of the body (eight subjects).

The unexpected stimulus used in the previous series was the ringing of a bell; the same stimulus was again used, but the subject was in this series prepared for the stimulus by hearing "Ready" thirty seconds, and "Now" two seconds before the bell sounded. In some subjects the emotion was greater, in others it was less, than in the case of the unexpected stimuli. Whichever way the preparedness operated, the average deflection for all cases described by the subject as emotionally weak, was .25 cm.; for all described as medium, .92 cm.; for all described as strong, .72 cm. (four subjects). If after the two warning signals the ringing of the bell did *not* follow, the deflection was still greater. "The emotional excitement caused by the omission of the bell was in most subjects quite vivid and usually amusing." (The Freudian theory of wit would reasonably explain this *amusing* character as being due to the co-conscious antagonism of the comprehensive personality to the narrowing constraint of experimental conditions. The greater part of the personality is rigidly held in check by the will to be experimented on, the "upper instance," but is released for a moment when the restrictions imposed lapse and become nugatory — the conditions for a situation mildly humorous. Observation at the moment bears out such an analysis, for the subject visibly "wakes up," often stretches the legs, hums a few notes, coughs, and attends to any other small irritation that may have been previously inhibited). Unpleasant stimuli (odors, pinches, etc.) gave subjective gradations of unpleasantness which were in close agreement with the galvanometric readings. "The average deflection for 'weak' is the smallest, and for 'strong' the largest" (eight subjects). In the last series of experiments the subject read to himself informative and humorous passages. "Both readings were accompanied by deflections [decreased resistance of the body]. The 'humorous' reading, however, produced larger deflections than the 'informative,' .42 cm. and .29 cm., respectively" (four subjects).

These experiments are to be specially commended, perhaps, because the author used non-polarizable calomel and mercury electrodes (Ostwald-Luther), which have furthermore a very low

heat coefficient. This has not generally been done, and while platinum and other electrodes may give positive results of value, these are never at all *pure*; and the ever imminent random variations of the readings are likely to lead the experimenter to unfounded conclusions. This point has been well discussed by Dr. Dunlap (*Psychological Bulletin*, 1910, vii, p. 174).

HOLT

MENTAL DISTURBANCES IN CASES OF BRAIN TUMORS (PSYCHISCHE STÖRUNGEN BEI HIRNTUMOREN). By Pfeifer. *Arch. f. Psychiatr. u. Nervenkrankh.* Band XLVII, Heft. 2, S. 558.

THE relationship between mental symptoms and physical changes in the brain is an important and interesting question, both for practice and for theory. Only too often, however, as here, the symptoms are studied, by those who have the special opportunity to observe them, more from the point of view of clinical psychiatry than from that of psychopathology; still such material as is here presented has an undoubted value to the psychologist. The present careful monograph, one hundred and eighty pages long, is based on an analysis of eighty-six original cases of brain tumor; the most important previous work on the subject is also adequately considered. As most of it is mainly of clinical interest, we may here refer to only a few points that have a special bearing on psychopathology.

Mental disturbances were present in all the cases with the exception of three in which a successful operation brought the observation of them to a premature end. The symptoms are divided into general and focal. The commonest general symptom was a state of hebetude, lethargy, or even stupor, with reduced attention and great tendency to fatigue. This occurred in all cases that ran a normal course (uninterrupted by operation or early death). This state may prove very deceptive inasmuch as it leads to the occurrence of secondary symptoms very hard to distinguish from independent mental changes, such as blunting of feeling, poverty of movement, delayed ideation, etc. Striking was the frequency of disturbances of orientation and of the memory for recent events; confabulation was especially common.

Of definite clinical pictures by far the most frequent was a Korsakow's syndrome; this was accompanied by a polyneuritis in only four cases. It was often combined with delirious states, and, in two cases, with an anxiety psychosis. In the cases of moria (Witzelsucht) the Korsakow's syndrome was often tinged with a markedly euphoric mood. The second most frequent

clinical condition was a delirious state. Other definite ones were rare, and were found in only five cases, namely one of twilight state, one of anxiety psychosis and three of catatonia. None of these conditions could be correlated with any given region of the brain, and they are certainly results of increased intracranial pressure, just like headache, vertigo, choked disc, and so on. In five cases all symptoms immediately disappeared on the successful extirpation of the tumor.

No general psychical symptoms, such as reduction in attention, etc., could be correlated with any given site of the tumor. There is not the slightest reason to believe that the frontal lobes are especially concerned with intellectual functions. The only localization that could be made out was with the usual more neurological symptoms, such as aphasia, apraxia, mind-blindness, agnosia, inco-ordination, and so on. Sleepiness, hebetude, and rapid fatigability are not specially related to hypophyseal tumors, as has sometimes been stated. Lesions of Fleschsig's association centers produce no specific psychical disturbances. Once more, therefore, localization of psychical functions and attributes has proved impossible.

All the topics, as well as many others, are discussed in a carefully objective manner that makes the article one especially deserving of attentive perusal by all who have to deal with such problems.

ERNEST JONES

THE TRAUMATIC NEUROSIS: GENESIS, TRUE NATURE, PREVENTION. II. Cong. Internat. Leg.-Med., Brussels, August, 1910.
By Tom A. Williams.

THE author concludes that traumatic neurosis is an active fixed idea of disability, complicated sometimes by emotion, and is a pure hysteria in the first place; the neurasthenic symptoms are secondary. The cure is effected by removing the notion at the root of the patient's morbid attitude towards himself and society.

As a social and economic factor, traumatic neurosis will disappear only long after medical men are universally educated in the understanding of its mechanism, which will only occur when the psychological point of view is sufficiently general to be inculcated in medical colleges. Its control adds another to the public functions of the medical profession.

AUTHOR'S ABSTRACT

REVIEWS

THOSE NERVES. *By George L. Walton, M.D.* J. B. Lippincott Company, 1909.

THIS little volume of one hundred and ninety-eight well-printed pages deals exclusively with the mental side of the psychoneurotic. It is intended for popular reading, as the title clearly indicates, and it is written in a style that is uniformly simple and direct.

Among the topics handled are the doubts, fears, obsessions, manias (in the popular sense of the term), imperative impulses, morbid scrupulosity, and indecision, which characterize the victim of "those nerves," cause the major part of his suffering and cripple to a marked degree his vocational and social activities.

Dr. Walton regards this unwholesome brood of "faulty mental habits" as evidence of the fact that the personality has been allowed to grow flabby through failure on the part of the individual to cultivate and put to practical use the power of inhibition he possesses.

From this standpoint it naturally follows that riddance of these mental pests must come through personal endeavor on the part of the sufferer — in a word, through self-discipline and self-control.

The author fully realizes that for the nervous the practice of such salutary habits is often extremely difficult, but he does not for a moment concede that it is ever impossible. On the contrary, he holds that, with a little good will, even the most invertebrate of creatures may free himself of his obsessions and other mental shackles. In proof of this contention he brings forward cases that have fallen within his own ripe experience, and cites the dicta of such profound students of human nature as Epictetus and Emerson.

Considered from a purely literary aspect it may not be amiss to note that the text is replete with apt quotations from classical writers which are handled in a way that suggests a thorough familiarity with original sources, rather than a mere recourse to the ever-handly Bartlett. But the value of the book is not to be gauged by its literary merits. The advice it proffers is eminently sound and practical, and the victim of "those nerves" who takes it closely to heart is bound to profit immensely thereby.

J. W. COURTNEY

JAHRBUCH F. PSYCHOANALYTISCHE U. PSYCHOPATHOLOGISCHE FORSCHUNGEN. Band II. 2^o Heft., 1909.

THIS is the second number of the new periodical that was signalled in the June number of *THE JOURNAL OF ABNORMAL PSYCHOLOGY* (Vol. V, p. 89). The articles are so comprehensive, and often very special in nature, that we can here give only a general indication of them.

1. Binswanger. *A Hysteria Analysis*. This concludes the article begun in the previous number, and contains the fullest psychoanalysis that has yet been published; the article is one hundred and eighty-three pages long.

2. Freud. *Remarks on a Case of Obsessional Neurosis*. Freud has published nothing on this subject since his papers of 1896, and here gives a much profounder study of the problems involved. It is of fundamental importance for all those who are interested in the question of the psychogenesis of obsessions.

3. Ferenczi. *Introjection and Transference*. This is a highly important and original contribution, especially to the question of suggestion. The main points are dealt with in an article by the reviewer appearing in the December number of the *JOURNAL OF ABNORMAL PSYCHOLOGY*.

4. Stekel. *Contributions to Dream Interpretation*. Stekel here gives some suggestive hints on special types of dreams, such as "the dream within a dream," dreams about near relatives, etc.

5. Silberer. *Report on a Method of Evoking and Observing Certain Symbolic Hallucinatory Occurrences*. Silberer has experimentally studied the symbolic presentation in visual form of a preceding train of thought in the dozing state. It is a contribution to Freud's theory of Regression.

6. Adler. *Neurotic Dispositions*. This is a study on the one hand of certain abnormal character traits, and on the other of the physiological predispositions to certain psychogenic symptoms.

7. Abraham. *Freud's Writings from 1893 to 1909*. Abraham gives here a very useful and clear summary of Freud's writings on psychology and psychopathology.

8. Abraham. *Report on the Austrian and German psychoanalytic literature to the year 1909*. This excellent summary will also be most useful to those who wish to orient themselves on the subject.

ERNEST JONES

NOTICES

THE AMERICAN PSYCHOPATHOLOGICAL ASSOCIATION

The second annual meeting of The American Psychopathological Association will be held at Baltimore on May 10, 1911.

The morning session will be devoted to a Symposium on "The Pathogenesis of Morbid Anxiety," the papers to be contributed by Drs. Jones, Donley, and Sidis. Copies of these papers are to be sent to the members previous to the meeting, in order that they may be carefully considered and give rise to more fruitful discussion.

The afternoon session will be taken up by individual papers, contributed by the members, the subjects of which will be announced in a special notice to be sent out later.

THE NEW YORK PSYCHOANALYTIC SOCIETY

The New York Psychoanalytic Society was organized at a meeting held Feb. 12, 1911, at the residence of Dr. A. A. Brill. The following officers were elected: President, Dr. A. A. Brill, 97 Central Park West, New York; Vice-president, Dr. B. Onuf, Knickerbocker Hall, Amityville, Long Island; Secretary and Treasurer, Dr. H. W. Frink, 34 West Eighty-third Street, New York; Committee on Constitution, Drs. Farnell, Onuf, and Poate; Committee on Science, Drs. Karpas, Ricksher, and Scripture.

The aim of the Society is the study and advancement of Psychoanalysis in its application to nervous and mental disease. Meetings are to be held on the fourth Tuesday of each month. The Society will be incorporated, and is to become affiliated with the parent organization in Zurich.

BOOKS RECEIVED

THE INDIVIDUAL AND SOCIETY. *By James Mark Baldwin, D.Sc., LL.D.* Richard G. Badger, Boston, 1911. Pp. 210. \$1.50 net.

AN ADVENTURE. *By Elizabeth Morison and Frances Lamont.* Macmillan & Co., New York, 1911. Pp. 162. \$1.25 net.

THE JOURNAL OF ABNORMAL PSYCHOLOGY

JUNE-JULY, 1911

THE PATHOLOGY OF MORBID ANXIETY¹

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THAT the present subject is one of immense importance becomes evident from the following considerations. Including its indirect manifestations, morbid anxiety is the most frequent single symptom in psychopathology, and, I feel tempted to add, perhaps in all medicine; it has been called, and without gross exaggeration, the Alpha and Omega of practical psychiatry.² Secondly, the intensity of distress it may give rise to is equalled by that of very few other forms of suffering. Thirdly, the study of the pathogenesis of it is qualified, as perhaps no other, to lead us towards a comprehension of those deeper biological problems concerning the relation of body to mind that underlie the questions of the derivation of mental disturbances in general. Lastly, it is a disorder that in a great many cases obstinately resists treatment, unless this is based on a proper understanding of the pathology of it. This feature of refractoriness is dwelt on by most writers of experience, and was, for instance, one of the reasons why Oppenheim proposed the subject for discussion in a symposium held at the last meeting of the Society of German Neurologists.³ He quotes a touching letter from one of his

¹ Contribution to the Symposium of the American Psychopathological Association, May 10, 1911.

² Dick. *Die Angst der Kranken*. Allg. Zeitschr. f. Psychiatrie. 1877. Bd. xxxiii. S. 231.

³ Oppenheim. *Pathologie und Therapie der nervösen Angstzustände*. Deutsche Zeitschr. f. Nervenheilk. 1911. Bd. xli. S. 173.

patients: "I have been going about being treated now for six years without my condition being even temporarily bettered; I have visited the authorities of every country. Is the science of medicine really so poor that some one who is bodily and mentally sound cannot be freed from such an affliction?"¹ He further states that, "As a rule a psychotherapeutic treatment to be at all effective must be extended over many months. And I know a number of patients of this kind who need a permanent mental directing, or who have to undergo mental treatment for at least several months of every year."² Fortunately this pessimism is not justified in fact; it only arises when, from an imperfect knowledge of the pathogenesis, the proper line of treatment is not carried out.

The first problem is to define as nearly as may be what is to be understood under the term "morbid anxiety." It is at once obvious that the word "anxiety," the significance of which has been debased through the use of such expressions as "to be anxious to meet some one," etc., has now a much weaker meaning than the term needed to denote the condition under consideration, and which is more accurately described by the German word *Angst*; when, therefore, the word anxiety is employed in the following pages it will be in the more significant sense of *Angst*, or intense, morbid anxiety. It is customary to distinguish anxiety in this sense from fear,³ but it would seem that the resemblances between the two emotions are great enough to predicate a common biological source for them, and there is little doubt but that the differences between the two are due rather to the respective circumstances under which they arise than to more fundamental divergences. All writers seem agreed in regarding these differences as the same as those existing between *normal* and *morbid* fear, which can be formulated, as Oppenheim has done,⁴ under two distinct headings:

¹ Ibid. Op. cit. S. 188.

² Ibid. Op. cit. S. 190.

³ See, for instance, Hoche, *Pathologie und Therapie der nervösen Angstzustände* Deutsche Zeitschr. f. Nervenheilk. Bd. xli. S. 195. Janet, *Les Obsessions et la Psychasthénie*, 1903. t. 1, p. 463.

⁴ Oppenheim. Op. cit. S. 183.

(1) Preponderance of certain physical symptoms, many of which can be objectively investigated. Hoche, indeed, defines *Angst* as fear plus specific bodily sensations.¹ The main symptoms will presently be enumerated.

(2) Disproportion between the intensity of the emotion and the occasion of its occurrence. This is a more accurate statement than the one describing anxiety as an exaggerated form of fear, for normal fear may be very intense whereas anxiety need by no means always be so; it is not so much an excessive fear as a *relatively* excessive fear. The essential feature is the disproportion, anxiety being evoked on a given occasion where the normal would either experience a slighter degree of fear or none at all. It is obvious that in estimating the morbidness of a given attack of anxiety one has thus to judge by an empiric standard of how much fear is to be allowed to the normal under various circumstances. Often it is easy to decide this, but considerable difficulty may arise in borderland states; it will presently be pointed out that for certain definite reasons our standard of normality is too low, so that we are too generous in allotting some degrees of fear to the normal that, strictly speaking, have a pathological basis.

On taking up the clinical features of anxiety states we have to note the following facts. *First*, anxiety may appear as a symptom of any form of psycho-neurosis or psychosis. Those in which it is most prominent are hysteria, in the special form to which Freud has given the name anxiety-hysteria, in the compulsion neurosis, as obsessive phobias, in melancholia, especially in the cases occurring in women past the climacteric age, and in alcoholic conditions, especially the acute ones, such as delirium tremens. As is well known, Wernicke in 1894 attempted to mark off a group of psychoses as an independent condition, to which he gave the name anxiety psychosis.² This view did not find any wide acceptance, and, since the appearance of Forster's detailed clinical study,³ it may be regarded as a settled matter that

¹ Hoche. Loc. cit.

² Reported in the Allg. Zeitschr. f. Psychiatrie, 1895. Bd. li. S. 1020. See further his Grundriss der Psychiatrie. 1900. S. 236.

³ Forster. Die klinische Stellung der Angstpsychose, 1910.

anxiety occurring in any psychosis is merely one symptom of some more comprehensive condition. *Secondly*, on the other hand, there is no doubt that as a neurosis anxiety states may appear in a pure form. The first delineation of this condition was given by Hecker,¹ but it was Freud² who recognized the unitary nature of the syndrome and its nosological independence. It is true that this condition is most frequently found to be complicated by some other neurosis, but the occurrence of it in a pure form, called by Freud the anxiety neurosis, gives one a unique opportunity to investigate the pathology of the main symptom, anxiety, and was the occasion of Freud's formulating his views as to the significance of this. *Thirdly*, intense anxiety is such an unendurable form of suffering that every effort seems to be made on the part of the organism so far as possible to get rid of it. At all events it is found in experience that in any long-standing case of anxiety neurosis one of two things — or both — has happened. Either the physical manifestations increase at the expense of the mental — tending to replace them to a greater or less extent, — or the person guards against the outbursts of anxiety by the creation of sundry inhibiting phobias. These processes occur to a very varying degree in different cases, and they are hardly ever completely successful; the problem, however, is greatly complicated by their presence, and for the elucidation of the pathogenesis of pure anxiety one does better to investigate the cases in which they are less prominent. The importance of the former of these processes is twofold: In the first place it raises the difficult question of the relation of mental to bodily processes, and is one of the reasons why stress has so often been laid on the organic causes of anxiety states. In the second place, it is a matter of considerable practical importance, because when a patient's symptoms are referred to one or other system of organs the physician's attention is

¹Hecker. Ueber larvierte und abortive Angstzustände bei Neurasthenie. *Centralbl. f. Nervenheilk. und Psychiatrie*. 1893. S. 565.

²Freud. Ueber die Berechtigung, von der Neurasthenie einen bestimmten Symptomenkomplex als "Angstneurose" abzutrennen. *Neurol. Centralbl.* 1895. S. 50. Republished in the *Samml. kleiner Schriften zur Neurosenlehre*. S. 60, and the *Selected Papers on Hysteria and other Psychoneuroses*, Transl. by A. A. Brill, 1909, p. 133.

apt to get focussed there, and the general nature of the condition may be overlooked; the mistakes in diagnosis that in this way arise are very numerous, and though these clinical aspects do not here concern us they are referred to because they go to explain the fact that the great frequency of anxiety states is not generally recognized. The latter of the two processes also raises a series of fresh problems, concerning the psychogenesis of specific phobias, which have to be kept distinct from those relating to anxiety proper.

It is not necessary here even to enumerate the different views that have been put forward concerning the pathology of anxiety; those interested in the historical aspects of the subject may be referred to the writings of Forster,¹ Hartenberg,² Loewenfeld,³ Pitres and Régis,⁴ etc. We have, however, briefly to review the types of explanations that have been offered, which can fairly well be classified into definite groups. It may be said at the outset that very few writers now believe in either an exclusively mental or exclusively physical origin of anxiety, and that there is a general convergence towards the conclusion that both kinds of factors are operative. This biological conception, which is the one adopted here, in itself indicates that the solution of the problem is likely to be found by investigation of the inherited instincts, for it is in this sphere that the physical and the mental aspects of the human organism approach each other most closely. Before developing this conception it will be convenient first to consider the mental and physical aspects separately, from both a descriptive and pathological point of view.

In the mental manifestations the emotional element is naturally the most prominent. It consists in a curious admixture of dread, panic, terror, anguish, and apprehension. It varies greatly from, on the one extreme, a slight abashment, awkwardness, embarrassment, or confusion to, on the other, a degree of indescribable dread that may even rob the sufferer of consciousness. Common to all degrees

¹Forster. *Op. cit.*

²Hartenberg. *La névrose d'angoisse*. 1902.

³Loewenfeld. *Die psychischen Zwangerscheinungen*. 1904.

⁴Pitres and Régis. *Obsessions et phobies*. 1903.

is a sense of something impending, of anxious expectation of something harmful or awful. One needs an artist to portray the higher grades of dread. Guy de Maupassant in his novel "La Peur" sketches with a few rapid strokes a strikingly accurate picture: "C'est quelque chose d'effroyable, une sensation atroce, comme une décomposition de l'âme, un spasme affreux de la pensée et du cœur, dont le souvenir seul donne des frissons d'angoisse. Mais cela n'a lieu, quand on est brave, ni devant une attaque, ni devant la mort inévitable, ni devant toutes les formes connues du péril! Cela a lieu sous certaines influences mystérieuses, en face de risques vagues." The anxious expectation may become especially linked to certain ideas or occasions, usually loosely, so that it readily passes from one to another; the commonest of these are hypochondriac ideas, ideas of moral scrupulousness, fears of loss of property or of professional capacity, etc. Freud speaks of there being in this stage a quantity of "free, floating anxiety" which becomes attached to one idea after another. We here have the beginning of the passage of the condition into a true phobia, where the fear is, so to speak, precipitated on to a given idea, and becomes localized. The general mental effect shows an alternation or a combination of over-excitation and inhibition; as a rule the former is found with slighter grades, the latter with higher grades of anxiety. For instance, the thought processes may be either hurried and agitated, one idea rapidly chasing the other, with very superficial associations between them, or there may be a blocking of them, an inhibition, so that the mind may even "become a blank." The various kinds of insomnia frequently met with in this affection should here be mentioned, as also the bad dreams (anxiety dreams) that almost constantly accompany it; I have elsewhere pointed out¹ that the nightmare is a typical symptom of the anxiety neurosis. The fullest account of the mental state is given by Loewenfeld.²

In the genesis of anxiety most writers attach importance to mental factors. Mannhardt³ says that one of the chief

¹ On the Nightmare. *American Journal of Insanity*, Jan. 1910, p. 383.

² Loewenfeld. *Op. cit.* S. 306-308, 318-330.

³ Mannhardt. *Die nervösen Angstgefühle*. S. 15.

causes of the condition is overwork, Oppenheim¹ finds that in most cases grief or some psychical shock has been the provoking agent, Dagonet² traces it to a feeling of depression, which infects the mind with a sense of danger, and similar remarks will be found in most writings. So far as I know, the only writer that holds an intellectualistic (ideogenous) conception of anxiety is Dubois,³ who consequently believes that it can be treated by means of persuasive reasoning with the patient. He maintains that such patients show a general mental deficiency, superstitiousness, and lack of judgment; he attributes both anxiety and phobias to "faint-heartedness and defective logic." This conception approximates to Janet's⁴ less intellectualistic one of a "lowering of the mental tension" and "incapacity to give attention or to experience emotions demanded by the circumstances," i.e., a general psychasthenia; similarly Varendonck⁵ describes the origin of fear as a "mode of adaption to the new." In contradistinction from Dubois practically all other writers⁶ point out that such patients often show an astonishing general courage in face of real danger and difficulties, with unusually high intelligence and strong will power: many a hero of the battlefield has been overcome with extreme nervousness (i.e., anxiety) on having to make an after-dinner speech, and they often remark that they would rather face the former situation than the latter; the same applies to men distinguished for moral courage. As Oppenheim⁷ epigrammatically, but unfortunately not metaphorically, remarks, "Der Mut kann im Grosshirn herrlich thronen, während im Bulbus die Angst gebieterisch ihre Herrschaft

¹Oppenheim. Op. cit. S. 174.

²Dagonet. Les sentiments et les passions. *Annal. méd-psychol.* 1895. t. II. p. 5.

³Dubois. Psychologie und Heilkunst. *Berl. Klin. Woch.* 1909. Nr. 25. Zur Psychopathologie der Angstzustände. *Ibid.* Nr. 33. Pathogenese der neurasthenischen Angstzustände. *Volkmanns Sammlung Klinischer Vorträge.* 1909.

⁴Janet. Op. cit. p. 561.

⁵Varendonck. Phobies d'enfants. *La Revue psychologique*, mars, 1910. Vol. III, p. 38.

⁶Cf., for instance, Janet. Op. cit. p. 464.

⁷Oppenheim. Zur Psychopathologie der Angstzustände. *Berl. Klin. Woch.* Juli 12, 1909. S. 1294.

ausübt." Further, most observers¹ are agreed that the various fears and anxieties cannot be influenced by mere explaining and reasoning in the way Dubois believes; there is no question but that any success obtained by Dubois is, as Oppenheim² remarks, to be ascribed to suggestion.³ In fact the patients rarely need telling that their fears are groundless; much of their distress arises from their being unable to control fears that they realize are "foolish." Oppenheim⁴ puts this forcibly, when, referring to the dread of thunder, he says, "Versuche nur, sie zu beruhigen und von der Nichtigkeit ihrer Furcht zu überzeugen. Und wenn du mit Engelszungen zu ihr sprächest und die Redekraft der Propheten besäsest, es gelingt dir nicht, sie der qualvollen Lage zu entreissen." We shall see that the reason why morbid fears cannot be removed by appeals to the patient's conscious processes is that the cause of them does not lie there. The conscious process, e.g., the idea of an approaching thunderstorm, that evokes the anxiety attack is not the *cause* of this, but only the exciting agent; it is merely a signal that acts by arousing through association the real cause, which is entirely unconscious. A view allied to Dubois's superficial conception of the genesis of these troubles is that which attributes them to implanted ideas and fearful emotions, e.g., by the bogie stories of nursemaids or an erroneous religious training. This notion would hardly be worth discussing, in spite of its prevalence, were it not that in the latter instance there is a modicum of truth, there being in fact a close connection between morbid anxiety and most forms of religion. Those who trace morbid anxiety to early religious ideas, however, are guilty of a curiously simple error of logic. Because the two stand in a certain relation to each other it is inferred that one must be the cause of the other, the truth being that they are both manifestations of a common cause. To hold that an over-religious training is the cause of anxiety is like holding that

¹ See, for instance, Loewenfeld. *Op. cit.* S. 305.

² Oppenheim. *Deutsche Zeitschr. f. Nervenheilk.*, Bd. xli. S. 190.

³ See Ernest Jones. *The Action of Suggestion in Psychotherapy.* JOURNAL OF ABNORMAL PSYCHOLOGY. Dec. 1910. Vol. V. p. 217.

⁴ Oppenheim. *Berl. Klin. Woch. Loc. cit.*

the smoke of a fire is the cause of the heat it gives out.

Turning to the physical symptoms of anxiety we note the same admixture of over-excitation and inhibition phenomena as that referred to in connection with the mental symptoms. Thus one sees at one time a rapid, excited heart's action or a polypnœa, at another time a feeble pulsation with bradycardia or a bradypnœa with deep, sighing inspirations; pollakuria may alternate with retention of urine, hunger with loss of appetite, etc. The symptoms themselves need not here be detailed, as they are well known from the writings of Freud,¹ Janet,² Loewenfeld,³ Mosso,⁴ and others. They may be described with fair accuracy as excessive manifestations of the normal, physiological accompaniments of fear. They are, however, rarely developed in a uniform manner; in most cases certain manifestations stand out with great, or even almost exclusive, prominence. The most frequent regions in which this occurs are, in order, those of the precordium, the head, the sternum, and the epigastrium, the first being by far the most frequent.⁵ In such cases the patient often actually refers his anxiety, usually under the name of "nervousness," to the region most concerned; in other words, he feels it to be there, just as he would in the case of a painful sensation. As a rule the feeling is one of great weight and choking oppression, which may be accompanied by disagreeable paræsthesias, sometimes hardly to be distinguished from pain. Pseudo-angina is merely a symptom of precordial anxiety,⁶ as so-called bronchial asthma is of the sternal variety.⁷ The bodily secretions are profoundly affected, cessation of the salivary and gastric flow, with increased pouring out of urine and sweat, being the rule. Excessive and irregular functioning of the involuntary muscle fibers takes place, which may result in a peristaltic diarrhœa, strangury,

¹ Freud. Op. cit.

² Janet. Op. cit. pp. 218-231.

³ Loewenfeld. Op. cit. S. 308-312.

⁴ Mosso. Fear. Engl. Transl. 1896.

⁵ Forster. Op. cit. S. 15.

⁶ Loewenfeld. Op. cit. S. 309. Stekel. Nervöse Angstzustände und ihre Behandlung. 1908. Ch. vi.

⁷ Loewenfeld. Loc. cit. Stekel. Op. cit. Ch. vii.

tenesmus, seminal or vaginal emissions, vaso-motor constriction with coldness of the skin, etc. From this outline it will be evident that bodily processes are affected which are not at all under control of the "will" in the ordinary sense, though it has experimentally been proved that all of them may be influenced by deeper, automatic mental processes. Ignorance of the latter fact has contributed to the opinion being formulated by many writers that the cause of anxiety states is to be sought exclusively in organic processes, other adjuvant factors being the general materialistic leanings of the medical profession, the inadequacy of the mental explanations commonly proffered, the failures of psychotherapy, and the remarkable extent and severity of the physical symptoms just mentioned.

The explanation of the pathology of anxiety on a physical basis has been, and still is, attempted along many different lines, and only a selection of the views held need be referred to. In general they may be divided into two classes: those that postulate an *undue excitability* and readiness of response on the part of the nervous centers concerned with the regulation of the visceral organs, and those that postulate an *undue excitation* of the nervous system as a result of disturbance of those organs. Of the two the former seems at present to be the more widespread; it was maintained in two of the three papers on the subject read at the last meeting of the Society of German Neurologists. It is foreshadowed in Roller's¹ hypothesis of a "functional disturbance in the medulla oblongata," and in Luys's² opinion that there is in these cases an ischæmia of the brain. The most modern form of it is expressed by Hatschek,³ who postulates a "special excitability of the subcortical, or spinal and sympathetic, centers," and by Oppenheim,⁴ who speaks of a "morbidly heightened excitability of the vasomotor-secretory-visceral nervous centers." It need

¹ Roller. Zur Pathologie der Angst. Allg. Zeitschr. f. Psychiatrie, 1880, Bd. xxxvi, S. 149.

² Luys. Traité clinique et pratique des maladies mentales, 1881, p. 496.

³ Hatschek. Zur vergleichenden Psychologie des Angstaffektes. Deutsche Zeitschr. f. Nervenheilk. Bd. xli, S. 211.

⁴ Oppenheim. Deutsche Zeitschr., Op. cit. S. 187.

hardly be said that no evidence whatever has been adduced for this hypothesis, which remains a pure supposition. According to Oppenheim and Hatschek the *modus operandi* is that these lower nervous centers react more readily, not so much to visceral excitations, as to "ideas and sense impressions"; there is, therefore, a relative inefficiency of the normal cortical inhibitions.

The second view was first formulated by Arndt,¹ who saw in an abnormal functioning of the heart the primary cause, an idea closely allied to that of Krafft-Ebing's² of an "over-excitability of the vasomotor nerves of the heart with consequent vascular constriction." Ball³ speaks of "reflex impulses that arise in the internal organs and are conveyed by way of the sympathetic," and Régis⁴ sees in *cœnæsthetic* troubles the starting point of the disorder. It is little wonder that, in view of these conceptions, Mannhardt⁵ has proclaimed massage over the solar plexus to be a sovereign remedy for the trouble. Hoche⁶ also definitely regards it as essentially of physical origin. He states that it may arise in two ways, as the result either of reflex irritation or of poisoning (mostly with carbon dioxide); of these the latter is, according to him, considerably the more frequent. Meynert's⁷ hypothesis is a combination of these two sets of views; he supposes a "dyspnœic nutritional state of the cortex the result of vaso-constriction produced by excitation of the vasomotor cortical centers."

Plainly the views just mentioned arise through attention being especially directed to the physical symptoms of the anxiety syndrome. If there were no other symptoms to be accounted for, the inadequacy of these views would not be so evident, but it cannot be disguised as soon as we begin to apply them to the mental symptoms. These are supposed essentially to consist in the apprehending of dis-

¹ Arndt. *Allg. Zeitschr. f. Psychiatrie*, 1874, Bd. xxx, S. 89.

² Krafft-Ebing. *Lehrbuch der Psychiatrie*, 1890, S. 141.

³ Ball. *Leçons sur les maladies mentales*, 1890, p. 178.

⁴ Régis. *Précis de Psychiatrie*, 1906. 3e éd., p. 251, etc.

⁵ Mannhardt. *Op. cit.*, S. 16.

⁶ Hoche. *Op. cit.*, S. 196, 200.

⁷ Meynert. *Psychiatrie, Klinik der Erkrankungen des Vorderhirns*. 1884.

agreeable physical sensations, a conception practically identical with that underlying the James-Lange hypothesis of the emotions. It is hardly possible satisfactorily to discuss the views in question without first considering in detail this hypothesis. This, however, cannot be done in the space at my disposal, and I propose to avoid the difficulty by assuming that the criticisms of numerous psychologists—Lipps, Wundt, etc.—have been effectual, so that at the present day the hypothesis is no longer tenable, at all events in its original form. I would only remark that in my opinion the purely clinical study of anxiety states affords weighty evidence against the probability of the hypothesis. Janet¹ has commented on the obvious objection that, in the case of various organic diseases, e.g., *morbus cordis*, the physical manifestations characteristic of the anxiety syndrome may occur in an even more severe degree than here without being followed by any anxiety,² and Loewenfeld³ has pointed out that the occurrence of the abortive anxiety attacks, i.e., pronounced physical manifestations with little or no anxiety, stands in direct conflict with the James-Lange hypothesis. Indeed, writing on the subject of fear, Stanley Hall⁴ goes so far as to say, "What problem could better illustrate the crude scholastic stage of the contemporary psychology of feeling and emotion than the elaborate recent discussions of the problem whether they are the results of tension of muscles, vessel walls, etc., or (whether) the latter are primal and causative?"

An escape from the deadlock in regard to the question of "physical or mental" has been sought by endeavoring to state the problem in terms of biology. Biologically fear must be regarded as being a protective mechanism, a defensive reaction against anticipated harm, and Stanley Hall,⁵ developing a suggestion of H. M. Stanley, has very plausibly

¹ Janet. Op. cit. p. 463.

² The reason why anxiety sometimes occurs in these cases will be pointed out later.

³ Loewenfeld. Op. cit. S. 314.

⁴ Stanley Hall. A Study of Fears, American Journal of Psychology, January, 1897, p. 241.

⁵ Ibid. Op. cit. pp. 242, 243.

argued that even in man it fulfils many beneficial functions. It is interesting to recall that with morbid anxiety the anticipatory dread of impending harm or danger, of pain in the broadest sense of the term, is a constant and characteristic feature, and this fact, therefore, should not be lost sight of when discussing the pathology of the emotion; in regarding anxiety from this point of view it is not necessary, however, to agree with Forster that it is possible to trace it to older memories of bodily pain or that the physical manifestations are nothing but reflexes evoked by the pain sense.¹

It was Darwin² who first expressed the thought that perhaps the tendency to fear certain objects is inherited from past generations. Stanley Hall³ has elaborated this suggestion to explain why fear arises in certain situations of life, under certain circumstances, in connection with certain ideas, etc., and recently Hatschek⁴ has also laid stress on the atavistic nature of morbid anxiety. No one can doubt that this is a very valuable point of view, and unquestionably true so far as the predisposition, the capacity of fearing, is concerned; the tendency to fear must in other words be regarded as a true inherited instinct. But when it comes to explaining by the same atavistic hypothesis the fear of certain objects, the anxiety under certain circumstances, serious, and in my opinion insuperable, objections can be raised. In the first place inherited habits, whether mental or physical, are characterized by stereotyped behavior, by regularly occurring under similar circumstances, and so on. Anxiety and fear, on the other hand, as King⁵ has pointed out in this connection, show just the opposite features, varying remarkably in intensity, and in regard to the kind of situation that evokes them, being in many cases very difficult to predict the occurrence of even in the same person. Then, again, the conception that certain ideas or memory contents can be directly inherited is not supported by any evidence,

¹Forster. *Op. cit.* S. 13-15.

²Darwin. *The Expression of the Emotions in Man and Animals*, Pop. Ed. 1904, p. 40.

³Stanley Hall. *Op. cit.* pp. 244-248.

⁴Hatschek. *Op. cit.* S. 210.

⁵King. *The Psychology of Child Development*, 2d edition, 1906, p. 56

and is quite foreign to our experience of child development.¹

The results of the discussion up to the present may be summarized in the following three statements: (1) As the condition frequently occurs when the bodily health is, so far as can be determined, otherwise perfect, there is no evidence in support of the views either that the nervous centers are in a state of primary over-excitability or that abnormal irritative impulses are arising in any pathologically altered visceral organs. (2) Morbid anxiety and its physical accompaniments are essentially an exaggerated manifestation of a normal biological instinctive activity, the function of which is to protect the organism against pain (in the wide sense). (3) As the outburst of anxiety frequently takes place as a reaction to trivial occasions, which in the normal give rise to little or no anxiety, and also occurs quite spontaneously, independently of any ascertainable external cause, it follows that the external agents (including here also ideas of danger, etc.) cannot be regarded as the true cause of the anxiety, but at most as evoking factors. We have further noted the difficulty, which theoretically indeed amounts to an impossibility, of explaining the condition by either an exclusively "mental" or an exclusively "physical" hypothesis, and should be prepared to give the preference to any explanation that accounts equally for the mental and physical symptoms. Before formulating a unitary explanation of this kind, however, it will first be necessary briefly to separate again these two classes.

Further light on the mental aspect is obtained by a study of the psychogenesis of phobias, i.e., conditions in which outbursts of anxiety are more or less successfully guarded against by the building up of specific, protective fears. The subject itself does not properly belong to the present discussion, so that I will only shortly state two conclusions which are invariably reached whenever a psychoanalysis of a phobia is made. (1) Morbid fears of external objects or situations are projections of fears on to the outside that arise in relation to internal mental processes.

¹The distinction between inherited mental activities and acquired mental contents has been sharply drawn, and the subject strikingly developed, by Otto Gross. Ueber psychopathische Minderwertigkeiten, 1909, S. 15, etc.

This process of projection, as is well known, is very common in everyday life. To give a simple example: A business man, whose affairs were financially unsound, heard a harmlessly meant reference to the finance of his business made by a friend, and immediately began to defend this with unnecessary heat; he had projected his inner feeling of reproach on to his friend, and read into the latter's words a meaning that was not intended. Qui s'excuse s'accuse. In dementia præcox, as Freud,¹ Jung,² and Maeder³ have shown, the process is remarkably frequent. The following is an instance of it in the present connection: One of my patients had a phobia of flower seeds, and this had arisen as a defence reaction against certain internal temptations relating to seed of another kind. (2) Morbid fears are the external expression of internal wishes. It is plain that every fear is but the obverse of a wish, e.g., a wish that the feared event may not happen. Two opposite mental processes are always closely associated with each other, so that it is not surprising that in psycho-analysis one finds fear to be intimately connected with desire; this becomes especially comprehensible when one recollects the fact, familiar in daily life to every one, that the readiest way of disguising a thought is to replace it by its opposite. This is, however, far from being the only mechanism at work in the construction of a phobia. The fear has morbid features only when the underlying wish is of a repressed kind, so that the phobia replaces this in consciousness. A simple illustration of the process is afforded by the case of a patient of mine whose child was the only obstacle that stood in the way of a divorce and a prospectively happy remarriage; she suffered intensely from the continuous dread that her child might in some way die, and had great difficulty in admitting to herself the possibility that she might have harbored a corresponding wish.

¹Freud. Weitere Bemerkungen über die Abwehr-Neuropsychosen. *Neurol. Centralbl.* 1896, S. 447. Reprinted in *Sammlung*, etc., S. 132, and Brill's transl. *Op. cit.* p. 173.

²Jung. Ueber die Psychologie der Dementia Præcox, 1907. Translated by Peterson and Brill, 1909.

³Maeder. Psychologische Untersuchungen an Dementia-præcox Kranken. *Psychoanalytisches Jahrbuch*, 1910, Jahrg. ii, S. 237.

Returning now to the physical aspects of the problem, we have seen that practically all writers on the subject are agreed in reducing the matter to a question of over-excitation of the nervous centers. Whether this over-excitation is a relative one, due to the action of normal stimuli on over-excitabile centers, or an absolute one, due to the action of pathological stimuli on normal centers (the two "physical" views discussed above) is irrelevant to the main point; the failure to discover a source for pathological stimuli has led most writers to predicate the former supposition. This failure, however, may have been due to the search having been directed solely to *pathological* stimuli, the possibility of abnormally strong *physiological* ones being overlooked. Janet¹ has stated the problem at this stage very justly: "En deuxième lieu l'angoisse contient des sensations de troubles organiques, ceux-ci nous apparaissent comme le résultat d'une décharge intéressante les appareils des fonctions organiques. Cette décharge est en rapport avec une fuite du courant inutilisé par les phénomènes supérieurs. Des fuites de ce genre sont nombreuses: un exemple bien frappant nous est donné par l'excitation génitale et la masturbation."² In other words everything seems to point to the symptoms being an *aberrant* discharge of excitations or impulses that cannot find their suitable outlet, or, as I have elsewhere³ expressed it, an excessive afferent excitation with deficient efferent outflow. Freud,⁴ agreeing with other writers up to this point, solved the difficulty by showing that the abnormally directed impulses were not, as had been thought, of a pathological nature, but physiological sexual impulses that were not finding a suitable outlet. Although Freud arrived at this conclusion quite empirically as a result of clinical experience, it would seem as though a priori reasoning, if logically carried through, could lead to no other result, especially in view of such considerations as the failure to find any source of pathological stimuli, the plain hint of a

¹ Janet. Op. cit. p. 561.

² He then relates some interesting examples of the kind.

³ The Relation between Organic and Functional Nervous Diseases. Dominion Medical Monthly, December, 1910, p. 205.

⁴ Freud. Ueber die Berechtigung, etc. Op. cit.

biological solution in relation to one of the inherited instincts, the nature of fear as being a defensive function, and so on. However, conclusions are apt to seem easy once they have been pointed out; *c'est le premier pas qui coûte*.

If one now tries to formulate Freud's conclusion in general terms it would run somewhat as follows: *Under certain circumstances, which will presently be mentioned, sexual excitations arise that cannot follow their natural course of leading to either physical gratification or conscious desire for such; being deflected from their aim they manifest themselves mentally as morbid anxiety, physically as the bodily accompaniments of this.* The circumstances in question may be of either a physical or mental nature, usually there being a combination of both; in both cases a state of tension due to physical over-excitation results from the unsatisfactory functioning of an important organic system. It is impossible to enumerate here more than a few of them; for further details Freud's writings must be consulted. The physical ones are conditions which cause sexual excitation without satisfactory gratification, such as the over-arduous embraces of engaged couples, coitus interruptus (probably the most frequent cause), abrupt introduction of girls or women to gross sexual experiences, disproportion between desire and potency, and, under certain circumstances, particularly when previous indulgence is suddenly given up, sexual abstinence.¹ Freud² has pointed out the resemblance of the physical accompaniments of anxiety states to those of the sexual act (rapid heart's action, hurried breathing, sweating, dry mouth, peristaltic contraction of involuntary muscles, etc.). The mental conditions are those that lead, by means of repression, to unconscious fixation of important components of sexual desire, so that they cannot reach consciousness; such are infantile conflicts arising during the normal suppression of perverse tendencies or incestuous

¹ This term is here used in its strict sense, as defined by H. v. Müller (*Sexual-Probleme*, 1909, S. 309), as meaning abstinence from physical gratification of the type of sexuality characteristic of the person concerned. Thus a person whose main sexuality is of a perverse type is abstinent even though exercising normal intercourse, while a normal person is abstinent even if he masturbates daily.

² Freud. *Sammlung*. Op. cit. S. 81.

attractions. A consideration of great practical significance is that such fixations may render the person incapable of obtaining gratification even though regularly exercising sexual relations; the case is then one of anxiety-hysteria. Morbid anxiety is commonly described by Freudians as being derived from repressed sexuality. While this is clinically true, it is psychologically perhaps more accurate to describe it as a reaction against repressed sexuality. Desire that can find no direct expression is "introverted," and the dread that arises is really the patient's dread of an outburst of his own buried desire.¹ In other words, morbid anxiety subserves the same biological function as normal fear, in that it protects the organism against painful mental processes of which it is afraid. It has a further biological root in being an exaggeration of the normal feminine apprehension of sexuality, and is thus a form of masochism.

I wish to lay stress on the fact that, at least so far as the somatic anxiety neurosis is concerned, the conclusion just enunciated is not a matter of psycho-analysis, so that it can at any time be tested by means of direct clinical investigation. Indeed it has been extensively confirmed by a number of observers who are either firmly opposed to psycho-analysis or else indifferent towards it; their unbiased testimony is therefore of especial interest. A few writers, on the other hand, admit the facts, but deny the conclusion. Janet,² for instance, says: "If one can get information and admissions regarding the sexual life of the patients, one sees that it is almost always disturbed, and that it is in fact disturbed just in the manner indicated by Freud. . . . I admit, then, the fact to which Freud has called attention, but I believe that it has to be interpreted." He then discusses the lack of gratification obtained by such patients, evidently cases of psychical impotence, but considers this failure to be merely a manifestation of their general psychasthenic defect.³ Psycho-analysis shows, however, that these defects, like all "psychasthenic" ones, are the result of specific disturbances

¹Typified in the common fear of becoming insane, i.e., of losing control of oneself.

²Janet. Op. cit. p. 622.

³Ibid. Op. cit. pp. 562, 623.

in the early development of the psycho-sexual life, and clinical observation shows that when the defects concern the sexual function itself, as in Janet's cases of impotence, the physical tension that results secondarily leads to an anxiety neurosis; there is in fact a vicious circle in the pathology. The objections raised by other authors are more superficial and have been fully met by Freud, both in his original paper and in a later one;¹ to answer them here would be merely to repeat Freud's words. Many consist of nothing but irrelevancies; thus, the only reason Oppenheim² gives for not accepting Freud's theory of the anxiety neurosis — a matter which has nothing to do with psycho-analysis — is that he cannot agree with Stekel's interpretations of dream symbolisms. Freud's observations and conclusions were confirmed, quite apart from psycho-analysis, by Gattel,³ Kish,⁴ Strohmayer,⁵ Tournier,⁶ Tschisch,⁷ and others. A great number of writers have published their experience of disorders resulting from sexual abstinence that are plainly symptoms of the anxiety neurosis; I need only refer to Erb,⁸ Féré,⁹ Gyurkowechky,¹⁰ Kafemann,¹¹ Krafft-Ebing,¹²

¹ Freud. Zur Kritik der "Angstneurose." Sammlung. Op. cit. S. 94.

² Oppenheim. Op. cit. S. 180.

³ Gattel. Ueber die sexuellen Ursachen der Neurasthenie und Angstneurose, 1898.

⁴ Kish. Névrose cardiaque d'origine sexuelle chez la femme, 1897.

⁵ Strohmayer. Ueber die ursachlichen Beziehungen der Sexualität zu Angst- und Zwangs-zuständen. Journ. f. Psychol. u. Neur., Dec., 1908. Bd. xii, S. 69.

⁶ Tournier. Essai de classification étiologique des névroses. Arch. d'anthropologie criminelle, 15 Janv., 1900.

⁷ Tschisch. Sixth Congress of the Society of Russian Physicians, 1896.

⁸ Erb. Bemerkungen über die Folgen der sexuellen Abstinenz. Zeitschr. f. Bekämpf. d. Geschlechtskr., 1910.

⁹ Féré. L'instinct sexuel, 1899.

¹⁰ Gyurkowechky. Pathologie und Therapie der männlichen Impotenz, 1897.

¹¹ Kafemann. Die Sexualhygiene des Mannes in Beziehung auf ansteckende Krankheiten und funktionelle Störungen. Sexual-Probleme, 1907, S. 97 u. 194.

¹² Krafft-Ebing. Ueber Neurosen und Psychosen durch Abstinenz. Jahrb. f. Psychiatrie u. Neur., 1889. Bd. viii, S. 1.

Loewenfeld, Marcuse, Neisser, Nyström, Porosz, Runge, and Rutgers.¹ This mass of work cannot be ignored by any one whose discussion of the subject is to be taken seriously.

An interesting indirect confirmation of the truth of Freud's conclusion has lately been afforded through Herz, of Vienna. In a book² devoted to the subject, and in a number of articles,³ he proclaimed the discovery of a special form of cardiac neurosis, to which he gave the name of "sexual psychogenic cardiac neurosis — phrenocardia," because the essential cause of it consists in lack of sexual gratification. The nosology and sexual etiology of this phrenocardia has been confirmed by Erb,⁴ Romberg,⁵ Rumpf⁶ and others; the general importance of sexual disturbances for the pathogenesis of cardiac neuroses has also been emphasized by Curschmann,⁷ Hoffmann,⁸ and Treupel.⁹ Now,

¹Loewenfeld. *Op. cit.*, S. 358, and *Sexualleben und Nervenleiden*. 4e Aufl., 1906, Ch. vi and vii.

Marcuse. *Die Gefahren der sexuellen Abstinenz für die Gesundheit*. Zeitsch. f. Bekämpf. der Geschlechtskr., 1910, Bd. xi, Heft. 3. Also published in brochure form.

Neisser. *Mittheilungen der Deutsche Gesell. f. Bek. d. Geschlechtskr.*, 1904, S. 10.

Nyström. *Das Geschlechtsleben und seine Gesetze*, 1904. *Die Einwirkung der sexuellen Abstinenz auf die Gesundheit*. *Sexual-Probleme*, 1908, S. 398.

Porosz. *Ueber das Wesen der sexuellen Neurasthenie*. *Monatsschr. f. prakt. Dermatol.*, 1903.

Runge. *Das Weib in seiner geschlechtlichen Eigenart*. 1900.

Rutgers. *Sexuelle Abstinenz und Lebensenergie*. *Die Neue Generation*, 1900, S. 271.

²Herz. *Die sexuelle psychogene Herzneurose (Phrenokardie)*, 1909.

³Ibid. *Seufzerkrampf*, *Wien. Klin. Woch.*, 1909, Nr. 39. *Die Herzneurosen, Die Heilkunde*, 1910, Nr. 1. *Ueber die psychischen Behandlung von Herzkranken*, *Wien. Klin. Rundsch.*, 1910, S. 75.

⁴Erb. *Monatsschr. f. Psychiatr. u. Neur.*, Aug., 1909, Bd. xxvi, S. 170, and *Münch. Med. Woch.*, 1909, Nr. 22.

⁵Romberg. *Die Lehre von den Herzneurosen*. *Deutsche Zeitschr. f. Nervenheilk.*, 1910, Bd. xxxviii, S. 185.

⁶Rumpf. *Zur Diagnose und Behandlung der Herz- und Gefäßneurosen*. *Deutsche Med. Woch.*, 1910, S. 1305 u. 1353.

⁷Curschmann. *Ueber Angina Pectoris vasomotoria*. *Deutsche Zeitschr. f. Nervenheilk.*, Bd. xxxviii, S. 216.

⁸Hoffmann. *Die Lehre von den Herzneurosen*. *Deutsche Zeitschr. f. Nervenheilk.* Bd. xxxviii, S. 207.

⁹Treupel. *Deutsche Zeitschr. f. Nervenheilk.*, Bd. xxxviii, S. 228.

although Herz does not mention Freud at all, it is apparent to any one who has read Freud's papers published in 1895 that phrenocardia is identical with the cardiac symptoms of anxiety neurosis there fully described; indeed, Stekel¹ had, in 1908, devoted to the subject a special chapter of his book.²

I have not cited the writings of any members of the Freud school in support of the conclusions here maintained, but need hardly say that the experience of all Freudians is unanimously in favor of them. Indeed, to any one who has carried out psycho-analysis it is an obvious truism that morbid anxiety is but another expression for unsatisfied sexuality, a truism that is confirmed anew in every case studied. I will only refer to the hundred cases narrated by Stekel³ in a book that gives an excellently full account of the clinical and therapeutic aspects of the different varieties of anxiety states.

Only two analyses of cases of anxiety states have been published in English, by Jung⁴ and Brill⁵ respectively. I have space here to record only a condensed abstract of a third one, chosen, out of a considerable number, because of several interesting features. It represented an unusually pure form inasmuch as the anxiety had remained undiminished in intensity for some years, and was further striking in that the localization of the physical symptoms was strongly determined by mental factors.

The patient was a lady, aged forty-six, who had been brought up amid well-to-do and refined surroundings. Her education had been fairly good, and her chief interest, apart from the usual social ones, lay in music, particularly in piano music. There was no history of nervous trouble

¹ Stekel. *Op. cit.*, Ch. vi.

² This unblushing plagiarism of Herz's has recently been followed by another on the part of De Fleury (*Bull. de l'acad. de méd.*, Déc. 21, 1909), Church (*Journ. of the Amer. Med. Assoc.*, July 23, 1910), and Mendel (*Neurol. Centralbl.*, Okt. 16, 1910), who have independently of one another discovered a "male climacteric," also described years ago by Freud as part of the anxiety neurosis. Church and Mendel consider it to be due to regressive changes in the sexual organs.

³ Stekel. *Op. cit.*

⁴ Jung. *The Association Method*, *American Journal of Psychology* April, 1910, p. 252.

⁵ A. A. Brill. *The Anxiety Neuroses*. *JOURNAL OF ABNORMAL PSYCHOLOGY*, June-July, 1910, p. 60.

in any other member of the family. She had married at the age of thirty-five, had borne two children, and had enjoyed a happy married life; seven years later her husband died suddenly. She herself had had no illness or nervousness until the age of twenty-six, when an attack of influenza left her with chronic indigestion. When this was bad it was accompanied with some slight general nervousness, but neither seriously inconvenienced her until the onset of her present trouble. This occurred eight months after her husband's death, and took the form of a severe "break-down" which confined her to bed for several months, and from which she had never recovered. In the past four years her condition had varied somewhat from time to time, but for two months previous to my seeing her she had again been confined to bed. Her symptoms were as follows: In the region of the stomach was a sensation of discomfort and distension, with some nausea and flatulence. Accompanying this, and largely situated there, was a feeling of extreme "nervousness" and agitation. Mentally there was great restless anxiety, with a sense of uncontrollable dread at some unknown impending terror. Physically the attack was characterized by violent trembling of the whole body, especially of the limbs, hurried breathing, excited and irregular heart's action, and profuse cold sweating. She suffered continuously to some extent from these symptoms, being never quite free of them, but they were much worse during the attacks, which lasted for several hours, and occurred daily in the early morning; on this account she could never sleep after about two A.M. No evidence of any organic gastric affection had ever been made out, though diligent search had been made (internal measurements of the stomach, analysis of the contents, etc.). Careful treatment, chiefly directed towards the stomach condition but also of a psychotherapeutic nature, had been carried on throughout her illness, but without any avail. Weir-Mitchell treatment, as is so often the case with such patients, had only made her condition worse, and had had to be given up after a six weeks' attempt.

Such were the main facts elicited by an ordinary medical inquiry. No doubt the condition would, as a rule,

have been interpreted as being due to a severe grief occurring to a patient who was subject to chronic "functional dyspepsia," a sequel of influenza. Oppenheim¹ states that grief and mental shock are such satisfactory explanations of the etiology of anxiety states that it is not necessary to search for repressed sexual complexes. The presence and activity of such complexes, however, is not affected by ignoring them, whereas they can be robbed of their power for harm by introducing them into consciousness. In the present case the effect of so doing was that after a month's treatment the patient was sleeping regularly throughout the night, after another month she was once more able to take up with enjoyment the social duties she had had to neglect for the past four years, and after a third month the malady was at an end.

The first important step in obtaining a sexual history was when the patient, under a display of shame and remorse as painful as I have ever witnessed, confessed that from the age of twelve up to the present time she had lived through an almost continuous struggle against masturbation; she had kept her guilty secret from her mother, her husband, and every doctor who had treated her. With a partly correct intuition she interpreted her anxiety symptoms as a dread against once more succumbing to the temptation, which had naturally been greater since the cessation of marital relations. In fact the "nervous breakdown," eight months after her husband's death, had been preceded the month before by a temporary relapse in this direction.

Such intense shame and remorse is rarely seen as a reaction against ordinary masturbation beginning at the age of puberty; as a rule it has deeper sources, being formed as a reaction against infantile auto-erotic tendencies, which have been repressed into the unconscious, and to which the later habit has become unconsciously associated. Liberation of these unconscious complexes causes the reaction to assume more normal proportions, and this is followed by a diminution in the force of the remaining temptation; these fortunate results followed the usual rule in the present case. The memories of the earlier auto-erotic activities were

¹Oppenheim. *Op. cit.*, S. 179.

brought to consciousness by means of psycho-analysis, mainly of dreams. They concerned both phantasies and onanistic acts relating to the urethra and the two alimentary orifices, with the corresponding excretions. Bed-wetting, continued almost nightly up to the age of thirteen, had acquired the significance of a nocturnal pollution, as it indeed frequently does. It had caused her great embarrassment and shame, for it so happened that it affected her social life in a considerable measure. On account of it she was not allowed to drink anything after three P.M., a restriction she evaded by guiltily stealing forbidden drinks; as a radiation of the corresponding affect she acquired a fondness for glycerine, vinegar, and whiskey. At the age of three and a half a baby sister was born, and her imagination, excited by the event, subsequently elaborated the following explanation of it: Children grew inside the body, and were evidently formed out of food; they entered the world through the only possible orifice, the anus. The food was stimulated to this activity through admixture with some fluid (analogy of urine and fæces, later, watering and manuring of vegetation). This fluid was supplied by the doctor, was therefore some special kind of medicine that had to be swallowed. She acquired a "fascination" for medicines, and throughout her childhood days drank all she could obtain. In later years she had a pronounced loathing for medicinal fluids that had features at all resembling semen, for instance, buttermilk, flaxseed emulsion, and koumiss, all of which were forced on her with the aim of bettering the stomach condition.

As she grew older and buried all memory of these tendencies by repression they manifested themselves in partly sublimated and partly reactive activities; for instance, the habits of finger-sucking and nail-biting (both of which were preserved through adult years), of biting and eating slate pencils, revelling in the making of sand pies, of mixing earth and water in a pot to make flowers grow (which was followed later by a passionate delight in flowers and in gardening), of manufacturing cold cream, cakes of soap, etc., and later in a fastidious abhorrence of dirt or untidiness in any form. She managed to prevent the crea-

tion of any neurosis, as a compromise formation on the part of the complexes, until she was twenty-six, when she had the attack of influenza. At this time she was severely disappointed in a love affair on which she had built many hopes; simultaneously it was decided, on account of bad wrist trouble, that she must forever give up the practice of piano playing. The latter had served as an outlet for much of her emotional life, partly through the æsthetic pleasure of music, partly because, as is often the case, it was unconsciously associated with the act of masturbation, and was serving as a sublimated vent for this tendency. Her adult emotional (psycho-sexual) outlets and aspirations being thus violently checked, she was thrown back on the infantile forms, on the basis of which was constructed the neurosis. The first symptom of this was distressing nausea occasioned by the medical administration of whiskey, which was in many ways—one was mentioned above—associated with the infantile complexes. The various gastric symptoms, nausea, distension, flatulency, pain, etc., were individually psychically constellated, and were products of the infantile forms of her sexual life. Her hetero-sexual tendencies became fully awakened in marriage, and the renouncement of them was followed by a still more stormy return to old conflicts, with the outburst of the graver stage of the neurosis.

In this case we see the early stages of a tendency to phobia formation, to which the neurosis did not actually lead. Many phobias of edible substances, or of objects resembling these, are but elaborations of a basis similar to that just described. The case illustrates one of the ways in which anxiety symptoms may become localized in one or other system of organs. Another way is through the presence of actual organic disease. I have observed, for instance, that cardiac symptoms are pronounced when an anxiety condition supervenes on a case of heart disease more frequently than when it occurs alone; even in such instances, however, psychical factors generally play a part in determining the localization. The basis for the production of an anxiety hysteria is so common that even when, as in the case just described, they have previously remained latent, the

altered mode of life, e.g., sexual abstinence, caused by an organic disease, particularly heart disease, may provoke the first outbreak of a neurosis; this is the reason why anxiety symptoms are far from being a rare complication in chronic cases of, for instance, heart disease.

Attention carefully directed to the study of anxiety states has shown that they are a great deal commoner than is generally supposed, the significance of the symptoms being often overlooked through clinical ignorance. Psycho-analytic research has further made it highly probable that many kinds and degrees of fear that pass for normal, e.g., fear of fire, of mice, etc., take their origin in unconscious complexes and are psychologically as "abnormal" as any phobia. If one reads the description of fears amongst normal people, such as these collected by Binet,¹ Calkins,² Stanley Hall,³ and Varendonck,⁴ the analogy between them and hysterical phobias inevitably forces itself on one. It is assuring to reflect that much of the fear, and anxiety, that bulks so large in the sum of human distress, even amongst the so-called normal, is entirely avoidable, and will one day be prevented when psycho-analytic experience is more widely recognized.

The conclusions thus reached can be condensed into the statement that *morbid anxiety means unsatisfied love*. That already the Greeks had an intuition of the close connection between these two instincts is indicated by their belief that Phobos and Deimos, the gods of Fear, were born of Aphrodite, the goddess of Love.

¹ Binet. *La Peur chez les Enfants*. *L'Année psychol.*, 1895, pp. 223-254.

² Calkins. *The Emotional Life of Children*. *Pedagog. Seminary*, Vol. iii, pp. 319-323.

³ Stanley Hall. *Op. cit.*, pp. 147-249.

⁴ Varendonck. *Op. cit.*, pp. 5-45.

FEAR, ANXIETY, AND PSYCHOPATHIC MALADIES

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I

THE causation of all psychopathic diseases can be referred to one fundamental instinct, the instinct of fear with its concomitant manifestation, the feeling of anxiety. Fear is one of the most primitive instincts of animal life. As Kipling puts it, "Fear walks up and down the jungle by day and by night." Our life is so well guarded by the protective agencies of civilization that we hardly realize the extent, depth, and overwhelming effect of the emotion of fear. Fear is rooted down deep in the very organization of animal existence, it takes its root in what is the very essence of life,—the instinct of self-preservation. *Primus in orbe Deus fecit timor.* "We lead," says Galton, "for the most part such an easy and carpeted existence, screened from the stern realities of life and death, that many of us are impelled to draw aside the curtain now and then and gaze for a while behind it."¹ "The progress from brute to man," says James, "is characterized by nothing so much as by the decrease in frequency of proper occasion for fear. In civilized life in particular it has at last become possible for large numbers of people to pass from the cradle to the grave without ever having had a pang of genuine fear. Many of us need an attack of mental disease to teach us the meaning of the word. Hence the possibility of so much blindly optimistic philosophy and religion. The atrocities of life become 'like a tale of little meaning though the words are strong'; we doubt if anything like us ever really was within the tiger's jaws, and conclude that the horrors we hear of are but a sort of painted tapestry for the chambers in which we lie so comfortably at peace with ourselves and the world. Be this as it may.

¹Inquiries into Human Faculty, p. 58.

fear is a genuine instinct and one of the earliest shown by the human child."¹

Similarly Sully says: "Fear appears early in the life of the child as it seems to appear low down in the zoölogical scale. Fear probably appears in the vague form (i.e., without any distinct representation of a particular kind of evil) in connection with presentation e.g., of strange animals, which have contracted no associations from individual experiences and which derive their emotive force from special inherited associations. Experience is, however, the chief determining factor in the evocation of fear."² "Fear," says Darwin, "is the most depressing of all the emotions; and it soon induces utter, helpless prostration, as if in consequence of or in association with the most violent and prolonged attempts to escape from the danger, though no such attempts have actually been made."

The fear of coming evil, especially if it is unknown and mysterious, gives rise to the feeling of anxiety. "If we expect to suffer," says Darwin, "we are anxious." Similarly James regards anxiety, especially the precordial anxiety, as morbid fear. "The anxious condition of mind," says Bain, "is a sort of diffused terror." Fear often expresses itself through cardiac and circulatory affections giving rise to the feeling of anxiety. Anxiety is nothing else but the working of the instinct of fear.

In most men the instinct of fear is controlled, moderated, regulated, and inhibited from very childhood by education and by the whole organization of civilized social life. There are, however, cases when the instinct of fear is not moderated by education and civilization, when the instinct of fear is aroused by some particular incidents or by particular objects and states. In such cases, if the instinct has not become controlled and inhibited, fear becomes associated with definite situations, giving rise to morbid fear and anxiety and resulting in the mental diseases known as psychopathies in general and psychoneuroses in particular.

In all such cases we can find the cultivation of the instinct of fear in early childhood. Superstitions, and es-

¹ Psychology, Vol. II, p. 115.

² The Human Mind, Vol. II, p. 92.

pecially the early cultivation of religion, with its fear of the Lord and of unknown mysterious agencies, are especially potent in the development of the instinct of fear. Even the early cultivation of morality and conscientiousness, with their fears of right and wrong, often causes psychoneurotic states in later life. What we find on examination of the psychogenesis of psychopathic cases, and especially of psychoneurotic cases, is the presence of the fear instinct which may become associated with some important interest of life. This interest may be physical in regard to the bodily functions, or the interest may be sexual, social, it may be one of ambition in life, or it may be of a general character referring to the loss of personality or even to the loss of mind. The fear instinct may become highly particularized and may become associated with indifferent objects giving rise to the various phobias, such as astraphobia, agoraphobia, claustrophobia, erythrophobia, acmephobia, and an infinite number of other phobias, according to the number of objects with which the fear instinct becomes associated. Of course, objects and situations which are in themselves dangerous, or are apt to bring about pain and misery to the individual, such as strange animals, unfamiliar conditions, or diseases, such as epidemics, or any other physical and mental maladies, are apt to be associated with and arouse the fear instinct. This, however, is not always the case. Objects otherwise indifferent and even pleasant may by association arouse the fear instinct and give rise to morbid states.

James makes an attempt to enumerate the various objects of fear in men, and especially in children. Among these he regards "strange animals, strange men, strange places, such as the fear of the sea in children who have not seen the sea before. The great source of terror to infancy is solitude. Black things, and especially dark places, holes, caverns, etc., arouse a peculiarly gruesome fear. This fear, as well as that of solitude, of being 'lost,' are explained after a fashion by ancestral experience. High places cause a fear of a peculiarly sickening sort. Fear of the supernatural is one variety of fear. This horror is probably explicable as the result of a combination of simple horrors.

To bring the ghostly terror to its maximum many usual elements of the dreadful must combine, such as loneliness, darkness, moving figures, inexplicable sounds, especially of a dismal character, moving figures half discerned, or if discerned, of dreadful aspect and a vertiginous baffling of expectation. This last element, which is intellectual, is very important. It produces a strange emotional curdle in our blood to see a process with which we are familiar deliberately taking an unwonted course. Any one's heart would stop beating if he perceived his chair sliding unassisted across the floor. The lower animals appear to be sensitive to the mysteriously exceptional, as well as ourselves. My friend, W. K. Brooks, of the Johns Hopkins University, told me of his large and noble dog being frightened into a sort of epileptic fit by a thread which the dog did not see. Darwin and Romanes have given similar experiences. The idea of the supernatural involves that the usual should be set at naught. In the witch and hobgoblin, other supernatural elements, still of fear, are brought in — caverns, slime and ooze, vermin, corpses, and the like. A human corpse seems normally to produce an instinctive dread which is no doubt somewhat due to its mysteriousness, and which familiarity rapidly dispels.”¹

The fear of the unknown, of the unfamiliar, of the mysterious is quite common with children, with savages, and barbaric tribes. We know how in the case of the ancient nations omens, whether religious or meteorological, such as storms, thunders, lightnings, comets, and eclipses, were regarded with great terror. Armies used to throw away their arms and run panic-stricken at the occasion of the appearance of a comet or of an eclipse. Even in the civilized times of the Athenian republic there was a terror of eclipses and of other unfamiliar natural phenomena. Thucydides, in his history of the Peloponnesian wars, puts the appearance of comets among national disasters. The fear of coming unknown, unfamiliar evil is especially a source of anxiety to the young or untrained, uncultivated minds. This fear of some unknown evil befalling a person may become a source of great fear and anxiety when developed in

¹Psychology, Vol. II, p. 418.

early childhood. This fear of strangeness, of unfamiliarity, a feeling of being lost, developed in early childhood may remain unassociated and thus give rise to a state of vague fear. Different forms of epilepsy are often associated with the fear instinct. The instinct, however, may through experience, through some trauma, find for itself an object, and become associated with it and thus give rise to the various forms of psychopathic diseases. "Anxiety, fear, horror," says Mosso, "will twine themselves perpetually around the memory, like deadly ivy choking the light of reason."¹

The fear instinct is at the basis of all psychopathic diseases. All the symptoms in their infinite variety are so many different manifestations of the one fundamental fear instinct. The inner conflict and introspection characteristic of psychopathic troubles, and especially of psychoneurosis, are pathological, solely because of their association with the fear instinct. Mental conflict and introspection never give rise to a mental malady. They are rather favorable to a speculative and philosophical turn of mind. When, however, introspection and mental conflict are associated with the fear instinct, then the result is a psychopathic malady. In the same way a physical sickness in itself, or the thought of suffering, physical or mental, does not give rise to a psychopathic affection. It is only when the sickness, or the thought of disease, becomes associated with the fear instinct, it is only then that a psychopathic malady arises. The sole source of psychopathic affections is the fear instinct, a development of which in early childhood predisposes to all forms of functional psychosis and neurosis.

II

There is another factor which helps to arouse the fear instinct, and thus plays an important rôle in the causation of psychopathic maladies. This factor is *a narrow, suggestible personal life*. In my work, "The Psychology of Suggestion," I proved by a series of experiments that the conditions of suggestibility are: Fixation of attention,

¹Fear, p. 226.

monotony, limitation of voluntary movements, limitation of the field of consciousness, inhibition. I have shown that these conditions are favorable to disaggregation of consciousness. I have pointed out that a disaggregation of consciousness with an inhibition of the controlling, waking consciousness is one of the important conditions in the causation of subconscious states with their accompanying abnormal suggestibility. In other words, the inhibition of the personal self, or even the limitation of the personal self, helps the formation of dissociations which constitute the soil of all psychopathic diseases. When the person therefore, is limited in his interests, is narrow in his range of knowledge, is ignorant and superstitious, and his critical personal self is embryonic and undeveloped, the predisposition to mental disaggregation is pronounced. The fear instinct has full sway in the production of psychopathic states. With the limitation and inhibition of the critical personal self, with the limitation and narrowness of personal life interests, there goes an increase of the sense of the unknown, and the mysterious, cultivated by religion and superstition, with the baneful consequence of the development of the fear instinct,—the cause of psychopathic affections.

In the embryonic personality of the child as well as in the undeveloped or narrowed individuality of the adult the sense of the strange, of the unknown, and the mysterious is specially apt to arouse the fear instinct. In fact, the unfamiliar arouses the fear instinct even in the more highly organized mind. "Any new uncertainty," says Bain, "is especially the cause of terror. We become habituated to a frequent danger, and realize the full force of apprehension only when the evil is previously unknown. Such are the terrors caused by epidemics, the apprehensions from an unexperienced illness, the feeling of a recruit under fire." "The mental system in infancy is highly susceptible, not merely to pain, but to shocks and surprises. Any great excitement has a perturbing effect allied to fear. After the child has contracted a familiarity with the persons and things around it, it manifests unequivocal fear on the occurrence of anything very strange. The grasp of an unknown person often gives a fright. This early experi-

ence very much resembles the manifestations habitual to the inferior animals." In another place Bain rightly says, "Our position in the world contains the sources of fear. The vast powers of nature dispose of our lives and happiness with irresistible might and awful aspect. Ages had elapsed ere the knowledge of law and uniformity prevailing among those powers was arrived at by the human intellect. The profound ignorance of the primitive man (and we may add of the undeveloped, limited, and superstitious adult) was the soil wherein his early conceptions and theories sprang up; and the fear inseparable from ignorance gave them their character. The essence of superstition is expressed by the definition of fear. An altogether exaggerated estimate of things, the ascription of evil agency to the most harmless objects, and false apprehensions everywhere, are among the attributes of the superstitious man."¹

Compayré, in speaking of the fear of the child, says, "In his limited experience of evil, by a natural generalization, he suspects danger everywhere like a sick person whose aching body dreads in advance every motion and every contact. He feels that there is a danger everywhere, behind the things that he cannot understand, because they do not fit in with his experience. The observations collected by Romanes in his interesting studies on the intelligence of animals throw much light on this question; they prove that dogs, for instance, do not fear this or that, except as they are ignorant of the cause. A dog was very much terrified one day when he heard a rumbling like thunder produced by throwing apples on the floor of the garret; he seemed to understand the cause of the noise as soon as he was taken to the garret, and became as quiet and happy as ever. Another dog had a habit of playing with dry bones. One day Romanes attached a fine thread which could hardly be seen, to one of the bones, and while the dog was playing with it, drew it slowly toward him; the dog recoiled in terror from the bone, which seemed to be moving of its own accord. So skittish horses show fright as long as the cause of the noise that frightens them remains unknown

¹Bain, *Mental Science*, p. 237.

and invisible to them. It is the same with the child. When in the presence of all these things around him, of which he has no idea, these sounding objects, these forms, these movements, whose cause he does not divine, he is naturally a prey to vague fears. He is just what we should be if chance should cast us suddenly into an unexplored country before strange objects and strange beings — suspicious, always on the *qui vive*, disposed to see imaginary enemies behind every bush, fearing a new danger at every turn in the road.”¹

Similarly Sully says, “The timidity of childhood is seen in the readiness with which experience invests objects and places with a fear-exciting aspect, in its tendency to look at all that is unknown as terrifying, and in the difficulty of the educator in controlling these tendencies.” Sully is right in thinking that intellectual culture tends greatly to reduce the early intensity of fear. “This it does by substituting knowledge for ignorance, and so undermining that vague terror before the unknown to which the child and the superstitious savage are a prey, an effect, aided by the growth of will power and the attitude of self-confidence which this brings with it.”² An uncultivated personality with a limited mental horizon, with a narrow range of interests, a personality sensitive to the moral categorical imperative, a personality trained in the fear of the Lord and mysterious agencies is a fit subject for obsessions.

In certain types of functional psychosis and neurosis the patient has an inkling of the fear instinct in his dread of objects, or of states of mind, moral scruples, lack of confidence, blushing, religious or social expectations of some coming misfortune and some mysterious evil, but he is not aware of the fear instinct as developed in him by the events and training of early childhood. *The fears of early childhood are subconscious.* At any rate, the patient does not connect them with his present mental affection. In other types of psychopathic affections the patient is entirely innocent of the whole situation, he is entirely engrossed by the symptoms which he regards as the sum and substance of his

¹ Cf. Compayré. *The Intellectual and Moral Development of the Child.* Part I, p. 185.

² Sully. *The Human Mind.* Vol. II, p. 93.

trouble, the fear is entirely *subconscious*. The fear instinct fostered by frights, scares, dread of sickness, by religious instruction with its fear of the Lord, by moral and religious injunctions and duties with fear of punishment or failure in the moral standard and duties, the enforcement of social injunctions with the consequent dread of failure and degradation, all go to the cultivation of the fear instinct which in later life becomes manifested as functional psychosis. *All functional psychosis is nothing else but an obsession of the fear instinct, conscious and subconscious.* Thus one of my patients became obsessed with fear of tuberculosis, manifesting most of the symptoms of "consumption" after a visit of a tubercular friend. Another patient became possessed with the fear of death after visiting a sick relative of his in one of the city hospitals. Another became obsessed with the fear of syphilis after having been in contact with a friend who had been under syphilitic treatment. Still another of my patients, in addition to the fear of darkness, became obsessed with the fear of stars and also with fear of the comet, which was regarded by many people as poisoning the air with its highly noxious gases. In all such cases there was anxiety and dread of some symptom state of an external object, but in none of the cases have I found that the patient had an insight into the real state of the mind, in all of them the fear was traced to early childhood, to early experiences of the fear instinct fostered and fortified by religion, morality, and social tradition. In all those fears lying on the surface of functional psychosis there was a long history of a well-developed subconscious fear instinct.

I may assert without hesitation that in all my cases of functional psychosis, and that without a single exception, I find the presence of the fear instinct to be the sole cause of the malady. Take away the fear and the psychosis or neurosis disappears.

The fear instinct arises from the impulse of self-preservation, without which animal life cannot exist. The fear instinct is one of the most primitive and most fundamental of all instincts. Neither hunger nor sex nor maternal instinct nor social instinct can compare with the potency of

the fear instinct, rooted as it is in self-preservation, — the condition of life primordial. When the instinct of fear is at its height it sweeps before it all other instincts. Nothing can withstand a panic. Functional psychosis in its full development is essentially a panic — it is the emergence of the most powerful of all instincts, the fear instinct. Functional psychosis is a veiled form of the fear of death, of destruction, of loss of what is deemed as essential to life, of fear of some unknown impending evil. How many times has it fallen to my share to soothe and counteract the fear instinct of panicstricken psychopathic patients! A psychogenetic examination of every case of functional psychosis brings one invariably to the fundamental fear instinct.

III

If we examine closely the symptoms of fear, we invariably find the symptoms of functional psychosis. Fear affects the muscular and sensory system, the vasomotor system, the respiratory system, the sudorific glands, the viscera, the heart, the intestines, etc. Bain, in describing the emotions of fear or terror, says, "The appearances may be distributed. Terror on the physical side shows both a loss and a transfer of nervous energy. The appearances may be distributed between the effects of relaxation and effects of tension. The relaxation is seen as regards the muscles, in the dropping of the jaw, in the collapse overtaking all organs not specially excited, in trembling of the lips and other parts, and in the loosening of the sphincters. Next, as regards the organic processes and viscera. The digestion is everywhere weakened; the flow of saliva is checked, the gastric secretion arrested (appetite failing), the bowels deranged, the expiration is enfeebled. The heart and circulation are disturbed; there is either a flushing of the face or a deadly pallor. The skin shows symptoms — the cold sweat, the altered odor of the perspiration, the creeping action that lifts the hair. The kidneys are directly or indirectly affected. The sexual organs feel the depressing influence. The secretion of milk in the mother's breast is vitiated."¹

¹Bain, *Mental Science*, p. 233.

Darwin gives the following description of fear:

"The frightened man at first stands like a statue, motionless and breathless, or crouches down as if to escape observation. The heart beats quickly and violently; but it is very doubtful if it then works more efficiently than usual so as to send a greater supply of blood to the body; for the skin instantly becomes pale, as during incipient faintness. The paleness of the surface, however, is probably in large part or is exclusively due to the vasomotor center being affected in such a manner as to cause the contraction of the small arteries of the skin. That the skin is much affected under the sense of great fear we see in the marvelous manner in which the perspiration immediately exudes from it. This exudation is all the more remarkable as the surface is then cold, and hence the term, a cold sweat; whereas the sudorific glands are properly excited into action when the surface is heated. The hairs also on the skin stand erect, and the superficial muscles shiver. In connection with the disturbed action of the heart the breathing is hurried. The salivary glands act imperfectly; the mouth becomes dry and is often opened and shut. I have also noticed that under slight fear there is a slight tendency to yawn. The voice becomes husky or indistinct, or may altogether fail. One of the best symptoms is the trembling of all the muscles of the body. From this cause and from the dryness of the mouth, the voice becomes husky or indistinct, or may altogether fail."¹

If we turn now to the manifestations of psychopathic maladies, we meet with the same symptoms:

(a) The attacks may be muscular, such as trembling, shaking, paresis, paralysis, or rigidity; there may be affection of locomotion or of muscular co-ordination.

(b) There may be sensory disturbances, anesthesia, paresthesia, analgesia or hyperalgesia, as well as affection of muscular sense and kinesthesia.

(c) There may be skin disturbances, such as check of perspiration or profuse perspiration, especially under the influence of emotions, worry, and fatigue; such perspiration

¹Ch. Darwin. *Origin of Species*, p. 290.

may also occur at night, and in some cases the fear of tuberculosis may be associated with such conditions.

(*d*) The lungs may become affected functionally and there may occur respiratory disturbances, coughing, hawking, apnea, and dyspnea, and asthmatic troubles may result.

(*e*) The heart becomes affected, bringing about precordial pain, palpitation of the heart, bradycardia, tachycardia, and cardiac arrhythmia may result.

(*f*) The stomach and intestines become affected, indigestion and vague fugitive soreness and pain may be experienced all over or in special regions of the abdomen, constipation or diarrhea may ensue.

(*g*) The renal apparatus may become affected and arrested, or what is more often the case in the milder forms of psychopathic troubles, there is present an increase or frequency of micturition, such as found in the conditions of anuria and polyuria.

(*h*) Menstruation becomes disturbed and we may meet with conditions of dysmenorrhea, amenorrhea, menorrhagia, and other disturbances of tubes, ovaries, and uterus.

(*i*) There are disturbances of the nervous system, such as headache and general dull sensation of fatigue and paresis of all mental functions, dizziness, and vertigo.

On the mental side we find in the psychopathies the following disturbances:

(*a*) Affections of perceptual activity, illusions, and hallucinations.

(*b*) Affections of intellectual activity, argumentativeness in regard to insignificant things, metaphysical and theological disputations.

(*c*) Affections of the moral sense, scrupulousness, overconscientiousness, not living up to ideal states.

(*d*) Affections of religious life, committal of sins and fear of punishment.

(*e*) Affections of social life, timidity, blushing, etc.

(*f*) Affections in regard to objects, such as astrophobia, acmephobia, agoraphobia, claustrophobia, etc.

(*g*) Affections of conceptual life, insistent ideas.

(*h*) Affections of the attention, aprosexia.

(i) Affections of the will, states of aboulia and uncontrollable impulses.

(j) Affections of the memory, amnesic and paramnesic states.

(k) General mental fatigue.

(l) Affections of sexual life, perversion and inversion.

(m) Affections in regard to marital relations.

(n) Affections in regard to personal life, diffidence, self-condemnation, self-depreciation.

(o) Affections of apparent loss of personality, feeling of self gone.

(p) Formation of new personalities, dual and multiple personality.

In connection with all such psychoneurotic affections we find invariably present a feeling of unrest, of uneasiness, a feeling of anxiety, *conscious or subconscious*, an anxious feeling of some impending evil. In all such affections we find the brooding spirit of the most powerful of all animal instincts,— the fear instinct.

IV

The teleology of fear is quite clear. Fear is the guardian instinct of life. The intensity of the struggle for existence, the preservation of life of the animal is expressed in the instinct of fear. The fear instinct in its mild form, when connected with what is strange and unfamiliar or with what is really dangerous to the animal is of the utmost consequence to the life existence of the animal. What is strange and unfamiliar may be a menace to life and it is a protection, if under such conditions the fear instinct is aroused. It is again of the utmost importance in weak animals, such as hares or rabbits, to have the fear instinct easily aroused by the slightest strange stimulus: the animal is defenceless, and its refuge, its safety, is in running. The unfamiliar stimulus may be a signal of danger and it is safer to get away from it, the animal cannot take chances. On the other hand, animals that are too timid, so that even the familiar becomes too suspicious, cannot get their food and cannot leave a progeny,— they become eliminated by the process of

natural selection. There is a certain amount of trust that nature demands, even of its most defenceless and timid children. The business of life cannot go on without a certain amount of credit.

Animals in whom the fear instinct can be aroused to a high degree become paralyzed and perish. Under such conditions the fear instinct not only ceases to be of protective value, but is the very one that brings about the destruction of the animal possessed by it. Intense fear paralyzes the animal. "One of the most terrible effects of fear," says Mosso, "is the paralysis which allows neither of escape nor defense." "Not all the phenomena of fear can be explained on the theory of natural selection. In their extreme degree they are morbid phenomena indicating imperfection of the organism. One might almost say that nature had not been able to find a substance for brain and spinal cord which should be extremely sensitive and yet should never, under the influence of exceptional or unusual stimuli, exceed in its reactions those physiological limits which are best adapted to the preservation of the animal."¹ Mosso quotes Haller, to the effect that "all phenomena of fear common to animals are not aimed at the preservation of the timid, but at their destruction." The fear instinct is no doubt one of the most fundamental and one of the most vital of animal instincts, but when it rises to an extreme degree, or when associated with familiar instead of strange and unfamiliar objects, then we may agree with Haller that the phenomena are not aimed at the preservation of the animal, but at its destruction; or, as Darwin puts it, are of "disservice to the animal." That is just what is found in the case of psychopathic affections. The fear instinct becomes aroused and cultivated in early childhood and becomes associated in later life with particular events, objects, and special states.

When the instinct of fear is aroused in connection with some future impending misfortune, the feeling of expectation with all its physiological changes, muscular, respiratory, cardiac, epigastric, and intestinal, go to form that complex feeling of anxiety so highly characteristic of the acute forms of psychopathic maladies. When fear reaches its acme, the

¹Mosso. *Fear*, p. 171.

heart is specially affected, the cardiac, circulatory and respiratory changes become prominent and give rise to that form of oppression which weighs like an incubus on the patient, the feeling is known as precordial anxiety.

The fear instinct is the ultimate cause of functional psychosis,—it is the soil on which grow luxuriantly the infinite varieties of psychopathic affections. The body, sense, intellect, and will are all profoundly affected by the irresistible sweep of the fear instinct as manifested in the overwhelming feeling of anxiety. The fear instinct and its offspring—*anxiety*—weaken, dissociate, and paralyze the functions of the body and mind, giving rise to the various symptoms of psychopathic diseases. The fear instinct keeps on gnawing at the very vitals of the psychopathic patient. Even at his best the psychopathic patient is not free from the workings of the fear instinct, from the feeling of anxiety which, as the patients themselves put it, “hangs like a cloud on the margin or fringe of consciousness.” The patient’s life is overshadowed by a gloomy feeling of anxiety which hangs on his mental horizon. From time to time he can hear the distant threatening rumbling of the fear instinct. Even when the fear instinct is apparently stilled the pangs of anxiety torment the patient like a dull toothache.

Montaigne, the great anatomist of human passions, in writing of fear, says, “I am not so good a naturalist (as they call it) as to discern by what secret springs fear has its motion in us; but be this as it may, it is a strange passion, and such a one as the physicians say there is no other whatever that sooner dethrones our judgment from its proper seat; which is so true, that I myself have seen very many become frantic through fear; and even in those of the best settled temper, it is most certain that it begets a terrible astonishment and confusion during the fit. I omit the vulgar sort, to whom it one while represents their great-grandfathers risen out of their graves in their shrouds, another while hobgoblins, specters, and chimeras; but even among soldiers, a sort of men over whom, of all others, it ought to have the least power, how often has it converted flocks of sheep into armed squadrons, reeds and bullrushes into pikes and lances, and friends into enemies *adeo*

pavor etiam auxilia formidat. . . . The thing in the world I am most afraid of is fear, that passion alone, in the trouble of it, exceeding all other accidents. . . . *Tum pavor sapientiam omnem mihi ex animo expectorat.* Such as have been well banged in some skirmish, may yet, all wounded and bloody as they are, be brought on again the next day to the charge; but such as have once conceived a good sound fear of the enemy will never be made so much as to look the enemy in the face. Such as are in immediate fear of losing their estates, of banishment or of slavery, live in perpetual anguish, and lose all appetite and repose; whereas such as are actually poor, slaves or exiles, oftentimes live as merrily as other folks. And the many people who, impatient of perpetual alarms of fear, have hanged or drowned themselves, or dashed themselves to pieces, give us sufficiently to understand that fear is more importunate and insupportable than death itself."¹

V

That fear is a fundamentally important element in neuroses and psychoses has been fully acknowledged by many a neurologist and psychiatrist. Thus Oppenheim says, "Fear is a common symptom in the neuroses. It may be an indefinite feeling of anxiety not awakened by any particular cause, or it may be definite concepts and external influences which call the fear into action. The sensation is variously described. It has its seat, as a rule, in the cardiac region, at other times in the head. The patient feels as if his heart were standing still; he thinks that he must fall or that he will get a stroke. Some explain the condition thus: 'It seems to me that I have done something wrong, as if something terrible is going to happen.' The expression of the face reveals a condition of anxiety, the fear often producing vasomotor, secretory, and motor disturbances; the face reddens or becomes pallid, perspiration breaks out, the

¹ Montaigne. *Essays*. Vol. I, pp. 55-57.

saliva ceases to flow, the lips and tongue become dry, the pulse and respiration become accelerated.”

“A materially different picture,” says Kirchoff, “is presented when the feeling of fear enters the symptom group (of melancholia). This feeling is referred to the cardiac region (precordial fear), and is one of the most important and frequent accompaniments of severe melancholia. The external quiet of severe simple melancholia becomes converted into anxious restlessness. From the start sleep is almost always disturbed, because the patient is tormented by the pressure in the cardiac region. Other disagreeable sensations soon follow, such as constriction of the neck or a dull feeling in the head, bad dreams and anxious thoughts become more numerous. The daily work may make the condition endurable during the day for a time, but in the stillness of the night it is rapidly intensified, and if sleep does not refresh the excited brain, the days likewise are filled more and more with disheartening fears. The implication of the organs of the body is much more distinct in anxious than in simple melancholia. The appetite is lost, the nutrition is rapidly impaired. Respiration is superficial, the heart’s action is accelerated and often irregular, the pulse is small, the skin is cool. When the terror shows variations or occurs in paroxysms, its increase is shown by suppression of the urine and perspiration, its subsidence by increase in these secretions. The more chronic the precordial fear the more indistinct do these symptoms become . . . Religious notions are often awakened and are then explained as the dread of being possessed by evil spirits. . . . In more severe cases the internal life becomes a real dreamy condition in which external expressions are received in a confused shadowy and inimical manner. A terrible, baseless, but paralyzing fear takes posses-

¹ One cannot help agreeing with Oppenheim in his protest against the superficial sexual “conversion” speculations in regard to the causation of psychopathic diseases in general and of the feeling of anxiety or so-called “Angstneurosen” in particular: “The view that these phenomena are always due to sexual excesses or perversions does not agree with my observations.” In fact it does not agree with the observations of any unbiased, experienced psychopathologist who is not blinded by a strange love and peculiar enthusiasm for the phenomena of sexual perversions. *Diseases of the Nervous System*, p. 725.

sion of consciousness.”¹ The anxiety states of neurosis and psychosis are essentially the offspring of fear. The anxiety states are due to the awakening of the fear instinct normally present in every living being. The fear instinct is a fundamental one, it is present in every normal human being, it is only inhibited by the whole course of civilization and by the training and education of social life. Like the jinn of the Arabian nights, it slumbers in the breast of every normal individual and comes fully to life in the various neuroses and psychoses.

Kraepelin and his school lay, with right, special stress on the fact that “Fear is by far the most important persistent emotion in morbid conditions. . . . Fear is manifested by anxious excitement and by anxious tension.” “Experience,” says Kraepelin, “shows an intimate relationship between insistent psychosis and the so-called ‘phobias,’ the *anxiety states*² which in such patients become associated with definite impressions, actions, and views. They are associated with the thought of some unknown great danger, although the patient may be aware that in reality nothing of the kind will befall him. Intense heart beat, pallor, feeling of anxiety, tremor, cold sweat, metoroismus, diarrhea, polyuria, weakness of legs, attacks of fainting, so that the patient loses control of his limbs and occasionally simply collapses. “These states,” says Kraepelin, with his usual insight into abnormal mental life, “remind one of the feeling of anxiety which in the case of healthy people may in view of a painful situation or of a serious danger deprive one of the calmness of judgment and confidence in his movements.”³ Thus we find from different standpoints that the feeling of anxiety with all its accompanying phenomena is one of the manifestations of the most fundamental, the most potent of animal instincts, the fear instinct which is at the basis of all psychopathic maladies.⁴

¹Kirchoff. Handbook of Insanity, p. 189.

²My italics.

³Psychiatrie, Vol. II, p. 541.

⁴I shall develop this in detail in my forthcoming work on Psychopathology.

The fear instinct as the most subtle and most fundamental of all instincts is well described by Kipling:

Very softly down the glade runs a waiting, watching shade,
And the whisper spreads and widens far and near;
And the sweat is on thy brow, for he passes even now —
He is Fear, O Little Hunter, he is Fear!

Ere the moon has climbed the mountain, ere the rocks are ribbed
with light,
When the downward dipping trails are dank and drear,
Comes a breathing hard behind thee — *snuffle* — *snuffle* through
the night;
It is Fear, O Little Hunter, it is Fear!

On thy knees and draw the bow; bid the shrilling arrow go:
In the empty, mocking thicket plunge the spear;
But thy hands are loosed and weak, and the blood has left thy
cheek —
It is Fear, O Little Hunter, it is Fear!

When the heat-cloud sucks the tempest, when the slivered pine
trees fall,
When the blinding, blaring rain-squalls lash and veer;
Through the war gongs of the thunder rings a voice more loud
than all —
It is Fear, O Little Hunter, it is Fear!

Now the spates are banked and deep; now the footless boulders
leap —
Now the lightning shows each littlest leaf-rib clear.
But thy throat is shut and dried, and thy heart against thy side
Hammers: Fear, O Little Hunter,— This is Fear!

FREUD'S ANXIETY NEUROSIS¹

BY JOHN E. DONLEY, M.D., PROVIDENCE, R. I.

THESE are few, perhaps, who will be disposed to deny that the formation of "schools," whether in the principles or the practice of medicine, has been, on the whole, quite as operative for harm as it has been productive of good. In saying this one is by no means unmindful of the universal and altogether human tendency, indeed sometimes even necessity, for men to group themselves about the leaders who appeal most strongly to their intellect or their sympathy. This very discipleship, however, valuable as it is in many ways, gives rise to certain psychological tendencies which, as one may think, have been not always conducive to the impartial pursuit of truth. Not indeed that there need be any conscious bias, but rather this,—the more or less partisan exigencies of the "school" tend to introduce the will to believe to such an extent that the latter may acquire a too potent influence over the mental processes of those concerned. Quite naturally the result has been many times, not only sins of logic, but of manners as well.

We have in our midst just such a phenomenon as this. On one side there are the members of the school of Freud, contending with much learning and enthusiasm,—may I add with now and then just a dash of condescension?—for the views of the Master; on the other hand, there is perhaps a larger body of men, possessing similar qualities, who vehemently differ from both Freud and his followers. It is a dependable sign of scientific immaturity to accept forthwith every new opinion, doctrine, or hypothesis, promulgated even by authority; and it is, I take it, the purpose of this symposium to set about a critical discussion of Freud's recent suggestion that we separate from neurasthenia a definite symptom complex to be known as anxiety neurosis.

I trust I may venture the too personal complexion of

¹Contribution to the Symposium of the American Psychopathological Association, May 10, 1911.

the remarks which follow, because I have thought that if I should express some of my own logical and psychological perplexities, it may contribute to the practical character of the discussion.

Setting out then to criticise, as I purpose to do, some of the pronouncements of this recent school of psychology, one must be prepared to break or to render innocuous the shaft of orthodox Freudian polemic, namely, the vigorous retort that the critic has not even acquired or, if so, has not properly employed the "method," which is, of course, psychoanalysis in the strictly Freudian sense. I shall seek to evade what has now become a thorny subject and have only this to say about it,— a method which appears to be esoteric and which according to the disciples of Freud is so eminently unsuccessful when used in the researches of other competent observers, can never become very widely applicable. This, of course, is no argument, and is not meant to be an argument against its value. But again, and curiously enough, so potent is the influence of a "school" of thought, that the followers of Freud give the impression of believing that the way to the promised land of psychology lies mainly or largely through their "method." Here they are guilty of a rather obvious *petitio principii*. Passing over, however, the question of method, let us consider Freud's views concerning anxiety neurosis, from the vantage ground of the general principles of reasoning.

Whoever has had even a limited experience with nervous people will readily admit that anxious expectation is of very common occurrence among the symptoms within his purview. So widely distributed is this feeling that it would be difficult to say when it is not present, in some manner and degree, in the majority of nervous patients. If, therefore, it is desired or desirable to set up a symptom-complex to be known as anxiety neurosis, the question to be asked is this: Have I noted in a moving equilibrium, man, that a certain series of changes, static and dynamic, has occurred more than once; if so, was the occurrence still fortuitous, or was the series a case of an orderly recurrent mode, which hitherto had escaped attention? If so the recurrence will be observed again and again, whether by myself or others in

approximate uniformity. The cases of the newly observed series will vary, some indeed so far as to trespass upon other nosological series already recognized, and no strict demarcation can be drawn around them; yet there may, nevertheless, be difference enough and constancy enough to make it worth our while, for the convenience of observation and thought, to erect the new series into a category of its own, and to stick a label on it. We shall demand, then, no more than this: Does the series recur with uniformity enough to make it desirable for purposes of identification and comparison to name it; as, for our convenience, we name a uniformly recurring set of stars Orion or Charles's Wain?¹ It is Freud's belief that there exists such an orderly recurrent series of symptoms having a well-defined etiology. This he desires to call anxiety neurosis because the sum of its components can be grouped around the symptom of anxiety and because each individual symptom shows a definite relation to anxiety. The symptoms of anxiety neurosis, according to Freud, are the following: (1) General irritability, occurring constantly and having a theoretical significance; (2) Anxious expectation, the most essential symptom of the neurosis. (3) Attacks of anxiety; (4) Rudimentary attacks of anxiety and equivalents for the attack of anxiety, these latter comprising a variety of somatic manifestations. (5) Nocturnal frights (*pavor nocturnus* of adults and even of children), usually combined with anxiety, dyspnea, perspiration, etc. (6) "Vertigo," a very prominent symptom of anxiety neurosis. This vertigo belongs to the locomotor or co-ordinating vertigo, like the vertigo in paralysis of the ocular muscles. (7) Two groups of typical phobias; the first referring to the general physiological menaces, the second to locomotion. (8) Digestive disturbances,—sensations like nausea and sickly feeling are not rare, and the symptom of inordinate appetite alone or with other congestions may serve as a rudimentary attack of anxiety. There is also chronic diarrhea. (9) Paresthesias which accompany the attack of anxiety or vertigo and which associate themselves in a firm sequence. (10) The chronic appearance of many of the so-called symptoms

¹Sir Clifford Allbutt, *Notes on the Composition of Scientific Papers*, p. 113.

which accompany or substitute the attack of anxiety. This is especially true of the diarrhea, vertigo, and paresthesias.

Here, no doubt, is a sufficiently long list of symptoms out of which to make a neurosis. Let us follow the steps whereby Freud seeks to establish it. In the first place he admits that in some cases answering to his formula for anxiety neurosis no etiology can be readily ascertained. But he continues, "Where we have reason to *assume*¹ that the neurosis is acquired we can find by careful and laborious examination that the etiologically effective moments are based upon a series of injuries and influences from the sexual life. These at first appear to be of a varied nature, but easily display the common character which explains their homogeneous effect upon the nervous system. They are found either alone or with other banal injuries to which a reinforcing effect can be attributed. This sexual etiology of anxiety neurosis can be demonstrated so preponderately often that I venture for the purpose of this brief communication to *set aside all cases of a doubtful or different etiology.*"² This seems to me to be a rather striking example of the influence of a preconception (derived from observation, if you will) in producing a sort of violent natural selection. Reduced to one sentence, Freud's statements amount to this: There are cases answering to the clinical description of anxiety neurosis in which no etiology can be readily ascertained, plus cases of a doubtful etiology plus cases of a different etiology; but setting aside all cases of anxiety neurosis not having a sexual etiology, all those having a sexual etiology are sexual in origin. Another way of putting it would be as follows: In some cases of anxiety neurosis, sexual influences are discovered to be concerned in the business, therefore they are the causes of it. Such a method of procedure will appear, I think, to most people to be quite arbitrary. There is an obvious selection of some cases and a rejection of others on behalf of a special hypothesis, which confessedly is able to offer an explanation for only a portion of the observed data. Here again is an example of the not uncommon way of getting rid (verbally) of obstacles by the convenient

¹Italics mine throughout.

²Selected Papers on Hysteria, Eng. trans. p. 141.

method of setting them aside. The accurate delimitation of symptom complexes is a thing much to be desired, and it may be that the time has come for the separation of anxiety neurosis from neurasthenia. But granting this, it can serve but poorly the purposes for which symptom complexes are made to select from a number of similar clinical cases a privileged few having a special and by no means adequately established etiology, and to claim for them alone the name which properly belongs to the whole group.

I speak subject to correction, but from the title, subtitles, and context of Freud's original article, I gather the impression that this is what he desires to do. The title of his article reads: On the Right to Separate from Neurasthenia a Definite Symptom Complex as Anxiety Neurosis. The subtitles are: Clinical Symptomatology of Anxiety Neurosis; The Occurrence and Etiology of Anxiety Neurosis; Addenda to the Theory of Anxiety Neurosis;¹ The Relations to Other Neuroses. There is here no more justification in logic than there would be were we first to divide fractures into those caused by falling on the sidewalk and those caused by automobiles, and then to attribute the name fractures only to those having the latter etiology. I do not wish to misrepresent Freud's procedure, but one receives strong confirmation of his suspicions when he reads: "The main objection against my formulation of a *sexual etiology of the anxiety neurosis* will probably be to the purport that such abnormal relations of the sexual life can be found so very often that wherever one will look for them they will be found near at hand. Their occurrence, therefore, in the cases cited of anxiety neurosis does not prove that the etiology of the neurosis was revealed in them."² And in a paper on the Anxiety Neuroses by one of Freud's disciples I read: "That anxiety plays a part in the neuroses was fully recognized by almost all writers on this subject; but its isolation into a separate entity, and its reference to a special sexual

¹ Among some of the followers of Freud there is a not infrequent looseness in the use of terms, e.g., we read of Freud's "theory of dreams," "theory of anxiety neurosis," etc. These are, of course, not theories at all; they are views, opinions, or, at most, hypotheses.

² Loc. cit., p. 144.

etiology was first established by Freud in his dissertation, 'On the Right to Separate from Neurasthenia a Definite Symptom Complex as Anxiety Neurosis.'"¹ And again: "According to Freud and his followers, the etiology of anxiety neurosis is to be found in a series of sexual injuries and other influences from the sexual life."² For Dr. Brill, the anxiety neuroses of non-sexual origin do not appear; the sexual etiology seems to have swallowed all of them. According to him "the actual neuroses, neurasthenia, and anxiety neurosis, differ materially from the psychoneuroses, compulsion neurosis, and hysteria. The latter group are due to purely psychogenetic factors, while the first are due to somatic sexual injuries." In what way, one would like to know, are compulsion neurosis and hysteria any less "actual" neuroses than neurasthenia and anxiety neurosis? With all their ingenuity and patient labor, which every one gladly welcomes, nevertheless the Freudian psychologists not seldom perplex us by the finality of their statements based upon rather nebulous reasoning. Moreover, we observe the frequent use of such words and phrases as these: "analogous" (at best a treacherous ally); "especially clear" (when it is rather especially cloudy): "it can be assumed" (it can, but should not be); "subcortically expended" (whatever that may mean); "fully sustains" (when it doesn't seem to); "confirm the theory in all particulars" (when there appears to be weighty evidence to qualify it). These and similar words and expressions make it a matter of no little difficulty to grasp the real significance of some parts of the Freudian psychology.

Whether or not we agree with the reasoning of Freud, it may be well worth our while to ask whether we ought perhaps to speak of neuroses with anxiety rather than of anxiety neurosis. Or to state it in simpler form, Is anxiety a sufficiently clear cut and stable thing to serve as the nucleus around which to assemble a definite symptom complex? I think that here we are in constant danger of parting company with the concrete richness of experience. Let me explain my meaning. Whereas generalization is of

¹ Brill, JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. V, No. 2, 1910, p. 57.

² Ibid. p. 59.

the very pith and marrow of all scientific procedure, still it may not infrequently lead to a blurring over of those differences which make one thing quite unlike another. This habit of generalization, as Professor Lovejoy remarks, leads us to assume that the similarity of the particular object to the rest of the class extends farther than it really does. The differences are quite as important, in truth, they may be more important than the resemblances. Now in the matter of anxiety this seems to me to be the case. We are apt to allow, unconsciously, no doubt, the abstract nature of language to mislead our thinking. Not everything that we label anxiety is the same thing, any more than everything we name depression is the same thing. But to speak of the anxiety neurosis would be tantamount to saying that anxiety is anxiety and there is an end of the matter. On the other hand, if we speak of neuroses with anxiety we are committed to no such scheme, for then it will be possible to state the context in which anxiety appears, and thus the way will be open to us to describe the concrete differences as well as the resemblances. Few, perhaps, would maintain that death from shooting and death from drowning are the same death. A man who is shot and a man who is drowned are both dead, but the total effect is never mere death, but death in some one special shape. One is dead with the special symptoms of death by drowning and the other with those of death by shooting. The water will kill you and a bullet will kill you, but death with a bullet hole does not come from drowning, nor death with one's lungs filled with water from a gunshot.¹ Similarly, anxiety is not a mere abstract floating somewhat; it always occurs in a particular concrete situation. The anxiety of angina pectoris (the *anxiété* of the French, as distinguished from *angoisse*) is not the same as the anxiety of the psychasthenic; again the anxiety of the latter is not the same as that occurring in those who are the victims of mental alienation. And yet the same abstract *name* "anxiety" is applied to all of these dissimilar things. In such use of language, we crystallize the resemblances but blur over the differences. The real question before us is this: Whether the anxiety experiences

¹Cf. A. E. Taylor, *Elements of Metaphysics*, p. 180.

of concrete persons have sufficient in common to warrant setting up an abstract conception,— anxiety neurosis. And assuming that we have decided that such a conception as anxiety neurosis is needed or justifiable, this conception ought to comprehend all cases in which anxious expectation is found; if it does not do so, then the principle according to which the conception has been constructed is either logically or ontologically deficient.

I have already urged that Freud's anxiety neurosis, from the etiological point of view, suffers from an incomplete enumeration, inasmuch as it does not include those cases in which, confessedly, can be discovered no satisfactory etiology at all, or on the other hand, one that is other than sexual. Now I would further contend as a second objection to the setting up of a so-called anxiety neurosis, that no matter how many cases you may find to come under your rubric, still there will be a number left over which show unmistakable symptoms of anxiety and which you can fit to the pattern only by an altogether unjustifiable use of abstraction. The situation would then amount to this: the facts would be trimmed to fit the concept, rather than the concept made to fit the facts. Hence it would seem that one is driven to conclude that any conception of anxiety neurosis which is true is so far lacking in precision, so loose and vague, as to be of little practical value; whereas any conception of anxiety neurosis sufficiently definite to be of use suffers from the defect that it is too exclusive. While I believe it to be demonstrable that sexual influences may and do produce neurotic conditions characterized by anxiety of greater or lesser degree, nevertheless for the reasons already set forth, I cannot see what useful purpose either for thought or for practice will be served by the recently suggested anxiety neurosis. The advice which William Ockham gave some six and a half centuries ago is just as applicable now as then: *entia non multiplicanda praeter necessitatem*.

In conclusion, then, I would say that, prescinding altogether from Freud's special method, his formulation of anxiety neurosis is defective, for two reasons: first, from the logical side it suffers from an incomplete enumeration, in so far forth as it takes into consideration only one of several

etiological factors; and secondly, it is defective from the ontological side, because in any sense in which it is true, it is too inclusive to be useful, while in any sense in which it is useful, it is too exclusive to be true.

THE MECHANISM OF RECURRENT PSYCHOPATHIC STATES, WITH SPECIAL REFERENCE TO ANXIETY STATES

Presidential address before The American Psychopathological Association, Baltimore, May 10, 1911

BY MORTON PRINCE, M.D.

I TAKE it I am right in holding that those perversions of mental and physiological processes which are commonly known as the psychoneuroses must be due to perversions of those same mechanisms by which normal, mental, and physiological processes are effected. If this be true — and indeed it is commonly admitted to be true of all disease processes, for, as has been said, disease is only a normal process functioning under altered conditions — if this be true, a right conception of the mechanism of the psychoneuroses can only be obtained by a study of normal mechanisms.

One of the most fundamental of normal processes is associative memory, by which not only the distinctly conscious experiences of life are conserved and made use of by the individual for the purposes of adaptation to the environment, but unconscious sensory-motor experiences, particularly (but not solely) in the lower animals, are similarly made use of for the same purpose. Incidentally I may say in this connection that there is a general tendency of modern students of animal psychology to interpret many actions in the lower animals which were formerly regarded as evidence of conscious reasoning, as nothing more than unconscious reactions or associative memory of a purely physiological character.

In psychopathology it will be generally conceded, I think, that memory as a process is the principal, if not the sole mechanism in certain psychoneurotic phenomena. In such phenomena the mechanism is perverted, to be sure, in that it misadapts the individual to his environment, but it

is memory none the less. The mechanism is perverted in the sense that through the memory process certain psychophysiological functions become associated with and react to stimuli which ordinarily have no such effect, and, in doing so, produce undesirable results.

I have long held that the pathology of certain functional disturbances of the mind and body may be regarded as simply perversions of memory, and have accordingly designated them as association neuroses, or psychoneuroses. I have also held, and ventured to teach for some years, that this same principle plays a large and important part in the mechanism of recurrent fixed ideas and other psychopathic states; for that memory is an essential factor in their pathology seems to me to have been amply substantiated by clinical observation and to be simply a statement of fact. But, even so, this does not preclude that other factors may not be involved, especially in determining in the first place those particular ideas and affects, and those particular physiological reactions which are to become a recurrent memory, and, in the second place, in maintaining these experiences in such a condition of excitability that the memories will not subside, i.e., in preventing the pathological reaction from giving place to normal reactions. In many cases at least it is not obvious on superficial examination why a given person develops certain ideas and emotions which are to become fixed and recurrent memories, and why these ideas are not subject to the control of the reason. So that another factor may have to be sought, and this factor may be the antecedent experiences of the individual's life, and his present mental attitude towards his fixed ideas.

I have ventured to think that this was an appropriate occasion, particularly in view of the fact that one phase of this problem was to be the subject of the symposium in to-day's program, to set forth certain views which my studies have led me to take and which I have long held and taught to my classes of students. I must premise, however, that what I have to say will be but an elaboration in more detail of theories which I have previously elsewhere propounded. The subject is a large one, and therefore I must confine myself to only one element in this difficult and per-

plexing problem, about which there is so much difference of opinion — namely, the relation of antecedent experiences to the development of recurrent psychopathic states.

In order that the conclusions to which I have been led regarding the mechanisms of these states may be intelligible it will be necessary to preface my discussion of them by a brief digest of so much of the mechanism as depends upon memory processes — at least in my view of the matter, as expressed in previous published statements.¹

We may begin by laying it down as an axiom that, as memory considered as a *process* consists in registration, conservation, and reproduction of experiences, any process which can be resolved into these three factors is memory.

Further, experiment and observation have shown that memory as thus defined may not be confined to the reproduction of conscious experiences, but may include those that never had a conscious equivalent, i.e., physiological experiences. The exact mode by which registration and conservation is effected need not delay us, as it is not germane to our inquiry. Suffice it to say that experiences are conceived of as leaving some physiological residua, or disposition to function, in the neurones involved. In consequence the neurones become linked together and sensitized, so to speak, in such manner that they tend, when stimulated by some element associated in the original experience, to function as a group, and reproduce that experience. For convenience of expression I have used the term neurogram to define such a conserved, linked, and sensitized group of neurones — which may, metaphorically speaking, be regarded as a neurographic record of the original experience. If one prefers to regard conservation as effected by psychical rather than by physiological residua the principle is in no way contravened.

Learning by experience as observed in lower forms of animal life (octopus, crab, fishes, amphibia, reptiles, spiders, etc.) even when it is an intelligent reaction is readily explainable on mechanical principles without the intervention of the conscious processes of reason, namely, the retention

¹Morton Prince: The Unconscious, JOURNAL OF ABNORMAL PSYCHOLOGY, October-December, 1908, February-March, 1909.

and association of sensory impressions with motor impulses, i.e., physiological or psycho-physiological memory. Learning by experience, when so performed, is the formation in the ganglia of new associations which tend to the modification of inherited activity. "That there is memory in fishes, amphibia, and reptiles cannot be doubted,"¹ but there is every reason to doubt whether it is a conscious process. Intelligent actions acquired by experience in these lower forms of life would differ from the instinctive actions of bees, ants, etc., in that the latter are due to congenital and hereditary associative anatomical arrangements, while the former are new arrangements formed by experience.

In the next place the experiments of Pawlow and others on animals have shown that it is possible artificially to educate certain digestive organs (salivary glands) to react to all sorts of sensory stimuli (sounds, tactile, and visual impressions, etc.), which ordinarily are inert by making use of the associative principle of the nervous system. Such a reaction is necessarily that of memory and consists on the one hand in the registration and conservation of the association between an ordinarily ineffective sensory impression and the salivary apparatus, and on the other in the reproduction of this association and consequently of the secretory process on each application of the stimulus. As the reaction is one that does not normally occur and misadapts the animal to the environment, it is a perversion of the normal secretory process. It is also plainly a neurosis by definition.

In human beings when we meet with similar perversions of normal reactions brought about by accidental or intentional education the process seems in every way identical with that observed in Pawlow's dogs. These perversions constitute the habit or association neuroses, if my interpretation of them be correct. The example which I have previously used, being one open to experimentation, is the neurotic type of hay fever and asthma. Here, just as with the salivary reflex in dogs, the vasomotor, lachrymal, pain, mucous, and other reflexes by constant repetition become associated with certain stimuli (dust, sunlight, odors, visual

¹Joseph McCabe. For a discussion of the evidence on this question, see *The Evolution of Mind* (Adam and Charles Black, 1910), by this author.

images, etc.). The repetition of the stimuli re-excites the physiological reflexes which become the symptoms. Such a recurring reaction is by definition a memory. As in man, however, the conditions have become more complex by the introduction of conscious processes of thought we find that these necessarily enter into the mechanism. As man is a thinking being he necessarily thinks of his ailments, anticipates, apprehends (i.e., fears) recurrences of his perverted reactions. Such apprehensions act as auto-suggestions and play the same part as do suggestions in hypnosis in the production of post-hypnotic phenomena.

In the neurosis the apprehended reaction is the psychophysiological memory. Thus the auto-suggestion sensitizes the neurograms and makes them more responsive to stimuli on the one hand, and on the other, keeps the memory from fading with time.

I have actually produced artificially a coryza by the suggestion in hypnosis that exposure to a certain flower would cause this neurosis. The suggested reaction to the stimulus followed.

RECURRENT FIXED IDEAS (OBSESSIONS)

When we study the recurrent fixed ideas from a clinical point of view I believe that all the facts indicate the working of the same mechanism. We know that ideas that have been subjected to repetition, or are accompanied by strong emotional tones, tend to be welded into complexes and to be conserved. Every school boy knows that any associative stimulus will cause such complexes to surge into consciousness. Now we find, as a matter of clinical observation, that recurrent fixed ideas or obsessions are always accompanied by strong feeling tones which, I believe, are always of the nature of fear in one or other of its various variants (apprehension, dread, anxiety, fright, etc.); that such fixed ideas often originate directly in some fear-inspiring trauma; that they are strongly associated into groups which recur over and over again in a stereotyped form, and that any associated stimulus will reproduce the whole group and its emotion. The behavior of such pathological complexes is similar in every way to that of normal complexes with or

without strong feeling tones, organized by education or otherwise. The mechanism of the latter is that of memory and it would seem that that of the former must be the same. One apparent difference is that the reproduction of the pathological complex is not within the control of the will (hence "obsessions"), and may be called involuntary memory, but the same is true, within certain limits, of some recurrent memories that do not pass beyond the grade of normality. The difference is easily explained by the fact that fear, which is an element of the complex, being a biological instinct or reaction, is not under the control of the will and therefore automatically surges into the conscious field. A study of the obsessions accordingly compels the conclusion that *the emotional complex plays the same part in the process of memory that the salivary apparatus plays in Pawlow's dogs, and the coryza complex in neurotic hay fever.*

Furthermore, we always find in such observations anticipatory apprehension of the attacks, that is to say, auto-suggestion.

But besides the obsessing ideas and emotions we always, I believe, find in such attacks a certain number of purely physiological disturbances of the viscera. These are vascular flushings or pallor, secretions of sweat, cardiac, respiratory, intestinal, and other disturbances. These are clearly referable to the functioning of their corresponding viscera, and are the physiological manifestations of emotion. These visceral disturbances as a part of the emotion become linked with the complex and are equally excited by the stimulus as elements in the obsession. If an attack of obsession be closely studied by one or other method of technic — and I have minutely studied many attacks — it will be always found, I believe, that an attack develops in the following stereotyped form:

1. A stimulus — a thought, or a sensation, or external perception which may be unconscious. The mere apprehension of an attack may act as a stimulus.¹

¹ In one case in which the sense of unreality was an obtrusive symptom the attack developed, on one occasion, in hypnosis, while the patient was being questioned and on another in sleep, in response to an imaginary remark of a dream personage.

2. As the reaction to the stimulus the symptoms develop in a certain combination and in a certain order of succession. The combination and succession vary in different cases, but are the same in each attack of the same individual. The symptoms are both psychological and physiological. The former include certain fixed ideas, fear in one of its variant forms, confusion and inhibition of thought, dizziness, sense of unreality, etc.; the latter include the physiological manifestations of emotion — cardiac, respiratory, secretory disturbances, etc. A greater or less number of each class of symptoms make up the syndrome.

Between attacks there may be a complete freedom from symptoms, or there may be in the background of the mind a partial consciousness of the apprehended attacks or of the ideas pertaining to them.

After the attack the patient may not remember the stimulus or, indeed, any one or several of the symptoms, but a searching analysis by technical methods will always, in my experience, bring back a memory of them as well as the order of succession.

The original attack, of which the succeeding ones are memorial repetitions, will be found to have originated in some psychical trauma, using the word in a broad sense, i.e., a violent physical or emotional shock, or some fear-bearing thought or external suggestion.

One type of attack may be termed *incomplete* in that it consists of fear (or anxiety) accompanied by the physiological manifestations of emotion without specific ideas, to which the fear relates, arising in consciousness.¹ The patient is thus anxious without knowing why he is anxious. He suffers from cardiac, respiratory, muscular, vasomotor, secretory, and other visceral disturbances as in complete attacks. There is every reason to believe that in these cases the specific ideas are co-conscious or unconscious, inasmuch as experimental investigations into psychopathic states have shown that when ideas are subconscious the emotions pertaining to them invade the personal consciousness. The

¹Freud's Anxiety Neurosis.

patient then has indefinable fear or other emotions without knowing the origin or meaning of the emotion.¹

It is a question whether there is not another type of incomplete attack in which the recurrent complex is made up of the physiological manifestations of emotion without the psychological element. In my first paper, fifteen years ago (1896),² on Phobo-Neurosis, in which I described a particular type of recurrent fear state and proposed the mechanism of the attack which I am here restating, I was inclined to believe that in certain cases fear as a distinctly conscious state may subside, and cease to be part of the attack, leaving only the "physiological manifestations of the emotion" as the "emotional complex"—an apparently paradoxical phenomenon. I am inclined to think now that I may have been misled by the stout denials of fear by the patients whose cases were cited. Be that as it may, and I think the point needs reinvestigation—the anticipatory fear of the attacks was recognized and given full weight as a factor in inducing attacks.

Besides recurrent fixed ideas, other recurrent states exhibit the same mechanism. Among these states are to be reckoned trance and "twilight" states, psycholeptic attacks manifesting various sensory and motor phenomena, etc.

The mechanism of all such recurrent states involves the registration and conservation of an experience accompanied by strong emotional tones, more specifically by the biological instinct of fear, and the reproduction of the experience partly through the suggestive influence of apprehension and partly through direct excitation of the associated stimuli. Such a mechanism is nothing more or less than the process of memory.

So much by way of preface as to the mechanism of the attack itself.

THE WHY

But in thus constructing the mechanism of the attack has the whole problem been solved? Why does fear become

¹Morton Prince: *The Dissociation of a Personality*; pp. 132, 297, 324.

²Fear Neurosis, read before the (Boston) Medico-Psychological Society, April, 1896, *Boston Medical and Surgical Journal*, Sept. 22, 1898.

awakened in some individuals by ideas which ordinarily do not excite fear? Must we assume other factors, perhaps subconscious, which determine what particular complex of ideas shall develop in the given individual under given circumstances, and whether it shall become linked with the biological syndrome of fear and "fixed" in such form and associative relations that it shall be reproduced as memory by stimuli? Indeed, do these other factors arouse the biological fear reaction in the first instance and, by their continuing influence, contribute at least to the fixation of ideas and their recurrence through associated stimuli?

In other words, it is the question of the "why?" Why do some people suffer from recurrent fear states and others not? All people do not experience fear when exposed to danger and of those who do, in only a small minority does the fear complex become so fixed that it recurs as a phobia. Some phobias undoubtedly originate in violent traumas, such as railway accidents, disease, etc., which would excite terrifying ideas in the average person. But there are some psychopathic individuals who are so "impressionable" that it is enough for a distressing thought to occur to the mind to become fixed and afterwards torment the individual as an obsession. The casual thought occurs to Y —, for example, of the possibility and consequences of falling from the end seat of the open street car on which he is riding; unlike the ordinary person, he at once experiences a fear and afterwards can ride only in the middle of the bench on account of the recurrence of the terrifying thought when he sits on the exposed end seat. Why should this apparently casual thought become insistent as a phobia?

In some people of the so-called psychasthenic type it is sufficient to read or hear of some unpleasant occurrence for them to develop at once, or within a short time, a recurring phobia. One reads of a suicide and the fear of committing suicide oneself becomes fixed. This tendency is so marked in C. F. that she dreads being told anything unpleasant lest the thought become an obsession. She has had, amongst others, obsessions of suicide, of jumping out of the window, of sexual ideas, of self-condemnation, of conscience, of insanity, etc., some growing out of the tittle-

tattle of a nurse, some from casual remarks of the physician, and so on. Analysis of her mental processes is handicapped by the fact that the awakening of possible etiological factors in her mind gives rise to new fears, doubts, and scruples.

Take, again, M. H. She has had a large series of fears of whether she has said anything to visitors and others reflecting on herself; fears as to whether she may have opened the window and talked to some one; fears of having written something she ought not to have in letters; fears that she might injure some one, and later, more specifically, fears that she would poison somebody, and so on. After a while the fears give rise to anxious doubts as to whether she has performed the dreaded actions. The fears have always directly originated out of trains of thoughts while lying awake at night when she has been in the habit of ruminating over her various problems. The thoughts which become fixed ideas seem often to have arisen from some casual remark made to her.

In such people fears are the accompaniment of a large variety of thoughts. You feel that if you shook such a person the fears would fall like apples from a tree and litter the floor. I do not include in this tendency to the development of different kinds of phobias that of a single dominating phobia to attach itself to all sorts of objects, places, actions, and different persons. The displacement of the emotion in such cases is really the result of a logical relationship. Thus one person may have a fear of railway trains, of theaters, of church, of crowded and solitary places, of social entertainments; another of water, of knives, of firearms, of high places, of gas. In each of these cases there is actually only a single fear; in the one case it is really only that of fainting, or collapse from imaginary heart disease, and the environmental conditions to which the emotion is displaced are simply the conditions under which an attack has occurred, or it is logically inferred may occur; in the other case the real fear is of suicide and the objects are conceived methods by which suicide can be effected, and the emotion is logically displaced from the original object to them.

Undoubtedly a basic condition for the development of obsessions is a disaggregation and automatism of conscious

processes by which given ideas tend to become freed from the control of correcting ideas and to acquire an independency of functioning. There is a psychic weakness (psychasthenia) of control and of the power of correcting and determining thought by comparison with conserved experience and knowledge. A normal individual, by reason of the knowledge which he possesses drawn from past experience, is able to correct, adjust, and determine his thoughts when these are not in accordance with the facts of life. But a psychasthenic has lost this capacity. There is then a fundamental psychic weakness in such individuals. But a phobia may exist without psychic weakness being present. In their minor grades obsessing ideas may be observed in mentally virile and healthy individuals. There is a tendency in all persons for complexes of ideas with strong feeling tones to become organized, to acquire a certain degree of automatic independency, and to recur. This tendency varies largely in different individuals according to what is known as temperament. I will merely mention the case of a surgeon who, otherwise normal, developed a fixed fear in connection with operating on knee joints in consequence of an unfortunate experience. When this tendency becomes enormously exaggerated it is called psychasthenia (Janet).

But aside from a psychasthenic condition (the nature and genesis of which I will return to later) is there another factor, conscious or unconscious, which determines the awakening of the fear as well as content of a particular obsession, and which is responsible for the intrusion of the idea into consciousness under specific conditions? And is this factor also that which is responsible for the psychasthenic state?

Before attempting to find a solution of the questions we have asked, we ought to recognize that the clinical syndrome of recurrent psychopathic states varies so considerably and that, as I believe, the psychopathic condition present varies so greatly in complexity that we are not always dealing with the same factors and mechanism. In other words, the pathology is not always a unity.

Roughly speaking, we may classify these recurrent states, as follows:

1. Association or habit neuroses (or psychoneuroses).
2. Association psychoses, or fixed ideas limited to one particular subject, without a general psychasthenic condition.
3. The same with a general psychasthenic condition.
4. Somatic anxiety states consisting wholly or almost wholly of emotion and its somatic manifestations.
5. General phobic states in which the content of the anxiety is more or less constantly changing and in which other manifestations of a general psychasthenic condition are present.
6. The classical hysterical states; such as psycholeptic attacks, crises, etc. (This last group may, for our present purposes, be left out of consideration).

Considering the differences in the complexity of the clinical syndromes in these different groups, it would be surprising if the pathology was the same in each and was limited to the same factors.

We must accept the principle that every fact in the psychical and physical world is related to an antecedent fact, and the only question is what antecedent facts determine particular mental phenomena, and by what mechanism. To take the simplest kind of example, suppose the word "match" is mentioned to a person as what is called a stimulus word in an association experiment. He responds with "fire." The response is of course determined by the association between the two ideas, which in his case we will assume is this everyday one: the immediate cause of the particular response is the stimulus word, but he might have responded with other ideas, equally associated with "matches," such as "box," "gas," "cigar," "wood," "phosphorous," etc.; or with sound associations relating to intimate personal experiences, such as "New York," "supper," "girl," "Mary," "insurance," "guilty," and so on. In this latter class of responses the association would be between the stimulus word "match," and some episode, possibly of an emotional character, in which the ideas denoted by the response words played a part. He might, for example, have used a match to set fire to a building to recover the insurance.

Now the stimulus being the same and having associations with this large variety of ideas, why did he respond with one idea rather than another? Let us suppose he responded with "insurance" instead of "fire." The factor, then, which determined this response rather than another would be a criminal experience conserved in the unconscious (a neurogram), supposing he had had the experiences I have mentioned. Although he had numerous other experiences this particular one had so strong an emotional tone, was so uppermost in his mind, its neurograms were so sensitized, i.e., its threshold so lowered, that it at once reacted to the stimulus. This is only another way of saying that the memory was so lively and demonstrative that it overrode all other associations. In the instance I have taken, of course, the individual consciously remembered the criminal experience which affected his response. Suppose now that he had responded by the word "New York." He might not be able to give any explanation of why this word came into his mind, but if his associated memories had been resurrected by any of the usual technical methods we should probably have found one among them of an experience in New York, long since forgotten, in which a match played a part. This experience might have occurred in childhood. If in numerous observations of this kind similar results were obtained we would be justified in inferring that the forgotten but conserved experience was the factor which determined the form in which the reaction to the particular stimulus occurred. Suppose, to take another example, that in the case of B. C. A. with a cat phobia, due to an incident of childhood when she was frightened by a kitten in a fit, an association test had been employed and in response to the word "cat" she had said "Detroit" (the city where the incident took place), or "mamma," or "fit." It would be a fair inference that the conserved but forgotten complex of the original experience had determined the response. If such inferences are soundly based, and they are now generally accepted, they would mean that past experiences not only determine the particular ideas and other mental phenomena by which the mind reacts to given stimuli, which is a self-evident

fact of everyday observation, but that they may do so without our being able to recognize the fact unless special methods of investigation are employed, and perhaps not even then.

If the individual responds to "match" with "fire" or "box" or (if he were a match manufacturer) "phosphorus," it is self-evident that it is because these are the usual conscious associations formed by the everyday experiences of modern civilization; but when the response is an unusual one, it is not self-evident that it is an association formed by such personal experience of the individual, particularly if this experience cannot be voluntarily recalled, or, as perhaps more frequently is the case, the response is only a single element in the experience and is not sufficient in itself to suggest the whole experience to which they belong. A single idea or even a limited group of ideas (house, flower, rising sun) belonging as they do to numerous experiences arising in consciousness are not ordinarily by themselves sufficient to make evident any particular experience from which they arise. In any case the idea contained in the stimulus word drags out of the unconscious the associated ideas.

Now I would point out that perfectly analogous effects are met with in post-hypnotic phenomena. The observation which I have just cited of the production of coryza by hypnotic suggestion may be taken as an example. It was suggested in hypnosis to B. C. A. (who had never had or thought of having hay fever) that the presence of a certain flower, *odonto glossum*, caused hay fever, etc. Later, when the symptoms of coryza developed in this patient, as a consequence of exposure to the flower and the suggestion, the thought came into her mind apparently out of a clear sky, that if it were summer time she would think she had *hay fever*. The association between the symptoms and hay fever as a cause was formed in hypnosis. After waking she had no recollection of course of the episode — that is, there was amnesia for the hypnotic experience. The association nevertheless was conserved and the symptoms (and her thoughts about them) — like a stimulus word — awakened this association and dragged the idea of hay fever out of the unconscious. Though the *origin* of the association was forgotten, the linking of neurograms was none the less in force.

A little more complex is the post-hypnotic phenomenon consisting of an apparently spontaneous expression of judgment, but which in reality is determined by a complex formed in hypnosis and forgotten on awaking. A subject, for example, is told in hypnosis that the weather is threatening, that it looks as if we were to have cold weather, and that we ought to prepare for the winter. The subject, after awakening, happens to look out of the window, and the thoughts suggested in hypnosis arise in his mind and he gives expression to them. Such an experiment, an old one, has often been made. I have frequently repeated it. The subject in giving expression to his thoughts does not know that they are not a newly formed judgment, but are a neurographically conserved mental experience which occurred in hypnosis. In consequence of his amnesia he does not remember their origin. The explanation of the phenomenon is a simple one, the phenomenon itself in principle is the same as that of word association tests. The glimpse of the outer world through the window stimulates the neurographic residua of the hypnotic experience, and the corresponding thoughts arise into consciousness. The experiment can be made more and more complex with correspondingly more complex results which may include action and conduct.

In all these examples there is no reason to infer that there is any unconscious functioning of past experiences beyond that of the neurograms struck. The facts simply indicate that the conscious reaction to environmental stimuli (perceptions, etc.) and other ideas (internal stimuli) is determined by complexes representing past experiences of the individual, though he may not be able to recognize the experiences.

The examples I have taken are very simple ones, but in passing I may point out that the same principle must hold in the more complex mental processes involved in the various spheres of everyday life. The unconscious residua — the neurographic records of our past experiences, as I have elsewhere expressed it, “tend to shape the judgments, the beliefs, convictions, and trend of our mental lives. In fact, the total of those complexes, which, regarded as a whole and in view of their reaction to the environment, their

behavior under the various conditions of social life, their corrective tendencies and feeling tones, their tendency to recur and dominate conduct, we term character and personality, were in large part predetermined by these mental experiences of the past, which have been conserved as residua. We are the offspring of our past."¹ Thus our political, ethical, and other judgments and beliefs regarding certain present-day problems may seem to be evolved by an independent and free consideration of certain contemporaneously presented facts, but really they are largely determined by mental processes of the past conserved in the unconscious. The newly suggested problem awakens associated ideas belonging to strongly held opinions (fixed complexes) particularly those with intense feeling tones, rather than those ideas pertaining to opinions which were not accepted and not fixed. Our beliefs are therefore determined by past complexes, though we may imagine that we have arrived at our conclusions without bias. To use a common illustration, an individual holds to one political party rather than another on a given question, such as protection or free trade, or whether international disputes should be settled by arbitration or war. In either case he imagines that he arrives at his opinion by an unbiased reflection upon the facts, but it would not be difficult to show that his opinion was in reality determined in the first case by associated ideas originating in party affiliations and antipathies to the opposing party, long accepted beliefs in protection or free trade, etc.; in the latter case by associations belonging to conceptions, originating in childhood and later years, of battles, wars, soldiers, navies, etc. The conscious thinking awakened by the questions at issue is largely determined by associated ideas of the past conserved in the unconscious. These ideas (ideals, convictions, passions, and prejudices, likes and dislikes, etc.) are stimulated as in the association tests by the newly presented ideas and constitute the conscious reactions to them. This general statement is only a more precisely formulated statement of the common experience of mankind. Nothing in such a statement is to be construed as

¹The Unconscious. *JOURNAL OF ABNORMAL PSYCHOLOGY*, October, 1908, p. 295. (With a few verbal changes.)

meaning that we do not have it in our power to modify and reconstruct old complexes — our convictions, points of view, etc., by comparing, reflecting, and observing, i.e., amalgamating new experiences with the old experiences, the clash between the two resulting in a new complex. On the contrary, that is constantly being done. This latter in the larger spheres of thought is the mental process of the reformer and leader of thought; the former the process of the conservative, the power by which society is held to establish order to traditional beliefs and principles.

In the case of at least many fixed ideas linked with fear, such as of fire, accidents, and even self-abashment, we can well understand that the conserved ideas deposited by the external and internal experiences of life — which would include family, social, industrial, vocational, pedagogical, and other environmental training, traumas, etc., — would necessarily determine what particular ideas and feeling tones would be awakened under specific stimulating conditions.

The phenomena are logically intelligible, to use the happy expression of William James in another but related connection, "as partly due to explicitly conscious processes of thought and will, but as due largely also to the subconscious incubation and maturing of motives deposited by the experiences of life."¹

Though these experiences may burst into flower under the stimulating influence of some accidental happening, or some train of thought suggested by the environmental situation and under mental and bodily conditions which removed inhibiting forces, the formative influences which prepared the subconscious material often date back into early childhood and, indeed, may have been in activity more or less continuously during a large part of the individual's life. Changing the metaphor, these antecedent experiences may be said to form the matrix out of which the fixed idea is crystallized by a given stimulus. To take a simple illustration:

It is impossible to conceive of a person being frightened by an automobile or railroad accident unless the mind had been prepared by antecedent knowledge of the dangers

¹The Varieties of Religious Experience, p. 238.

of such accidents in particular, and of accidents in general which produce physical violence. Out of this knowledge, deposited by the experiences of life and conserved in the mind, a psychical torch, so to speak, is formed, ready to be set ablaze by the first spark struck by an apprehended accident.

To take an instance commonplace enough, but which happens to have come within my recent observation: a fireman, rushing to a fire, was severely injured by being thrown from a hose wagon against a telegraph pole with which the wagon collided. He narrowly escaped death. Although three years have passed he still cannot ride on a wagon to a fire without the memory of the whole accident rising in his mind. When he does so he again lives through the accident, including the thoughts just previous to the actual collision, when, realizing his situation, he was overcome with terror, and he again manifests all the organic physical expressions of fear, viz., perspiration, tremor, and muscular weakness. Here is a well-organized and fairly limited complex. It is also plainly an *involuntary* memory.

The reason why the man at the moment of the accident experienced the terrorizing thoughts that he did must be sought in the conserved experiences of his past. These experiences were the psychogenetic factors. Here again we are confronted with the principle of conservation. In the subconsciousness of this man the social education had written in neurographic records the dangers attending accidents of this kind. He had read and heard of the consequences that had followed in other cases. He knew that people thrown violently to the ground under similar circumstances had been bruised, maimed, and killed. He knew that this particular kind of accident was not uncommon in the service to which he belonged and that he was at any time likely to be exposed to it. He had in consequence apprehended the very contingency that occurred. All this knowledge deposited by his past mental experiences had left its neurographic fuel ready to be set ablaze at the first touch of the match. It only required the accident to awaken these dormant thoughts and emotions with their physiological accompaniments.

It is safe to say that if an inhabitant of another planet where physical accidents never occur (if we can imagine such), and where every one is absolutely ignorant of the effects of physical violence, nobody having suffered such — if an inhabitant of that planet had come to this earth and had been riding in that patrol wagon he would have experienced no fear and no such disturbing thoughts when he was thrown to the ground as overwhelmed our fireman. He would have had no subconscious magazine of stored experiences to react to the stimulus of the accident. Similarly a child that has never heard of the dangers of lightning and has no associations of an apprehensive character connected with loud noises and flashes of light is not afraid of thunder storms.

Why the magazine reacted with the particular thoughts that it did in the case of the fireman of course depended upon the particular antecedent associated thoughts stored in the unconscious. So we see that not only the experiences of the accident itself became organized into a group and conserved as memory, but these very experiences were largely the offspring of memories of still earlier experiences which therefore stood in a genetic relation to them.

More complex and more instructive is a specific case which comes under my observation at this moment and interrupts the writing of this paragraph. It is one of hysteria of the neurasthenic type with outbreaks of emotional attacks in a middle-aged woman. It developed immediately in the midst of good health out of a violent and protracted fit of anger, almost frenzy, two years ago, culminating in the first emotional or hysterical attack. Looked at superficially the fit of anger would be considered childish because it was aroused by the fact that some children were allowed to make the day hideous by firing cannon crackers continually under her window in celebration of the national holiday. When more deeply analyzed, it is found that the anger was really *resentment* at what she considered unjustifiable treatment of herself by others and particularly by her husband, who would not take steps to have the offense stopped. It is impossible to go into all the details here, complex as they are; suffice it to say that below the surface the experi-

ences of life had deposited a large accumulation of grievances against which resentment had been continuous over a long series of years. Loving and respecting her husband, a man of force and character, yet she had long realized she was not as necessary to his life as she wanted to be; that he could get along without her, however fond he was of her; and that he was the stronger character in one way. She wanted to be wanted. Against all this for years she had felt anger and resentment. She had concealed her feelings, controlled them, repressed them, if you will, but there remained a general dissatisfaction against life, a "kicking against the pricks," and a quickness to anger, though its expression had been well controlled. These were the formative influences which laid the mine of gunpowder ready to be fired by a spark, feelings of resentment and anger which had been incubating for years. Finally the spark came in the form of a childish offense. The frenzy of anger was ostensibly only the reaction to that offense, but it was really the explosion of years of antecedent experiences. The apparent offense was only the manifested cause, symbolic if you like so to express it, of the underlying accumulated causes contained in life's grievances. It was as when a person angry with A "takes it out" on B.

It is instructive to note that this resentment deposited in the subconscious came to the surface in the hysterical attacks when it became a dominant fixed idea and filled the field of consciousness. It then was expressed as a resentment against God in whom she had lost her belief, and against the order of things in this world.

In making this analysis, the patient herself, with unusual perspicacity, clearly and almost spontaneously recognized its truth.

The influence of this same principle in the development of larger phases of the mind, larger systems of thought, has been well recognized in the life of William Sharp by his biographer, and indeed it was recognized by Sharp himself. "Though the Fiona McLeod phase belongs to the last twelve years of William Sharp's life, the formative influence which prepared the way for it went back to childhood." Again: "The ultimate characteristic expression of his 'dream self'

was due to the inspiration and incentive of the friend to whom he dedicated *Pharais*. It was, as he states in a letter to me [his wife], written in 1896, 'to her I owe my development as "Fiona McLeod," though in a sense, of course, that began long before I knew her, and indeed while I was a child'; and again 'without her there never would have been any Fiona McLeod.'"¹

Can we still go further in the problem of how past experiences determine the development of fixed ideas as reactions to the environment? In special cases, at least, are fixed ideas merely cat's-paws, so to speak, made use of by the neurographic residua of certain *other* past experiences, perhaps totally different in kind, which function unconsciously, without arising in consciousness, and which finally express themselves, symbolically, as it were, in consciousness by making use of the material furnished by a second class of experiences. To be more specific, though a phobia of a snake or of fainting, for instance, be a recurrent memory, may it not also be that this conserved experience is made use of by an unconscious process (unconscious "thoughts" let us call it) of a very different character to express itself in disguised form? Under this supposition these unconscious "thoughts" would be the continuation of some antecedent conscious experience of an entirely different kind, such as a wish or doubt or apprehension, or even fear of another object. These antecedent thoughts no longer functioning in consciousness, having been forgotten or put out of mind, let us say, for some reason, instead of remaining dormant, still continue from time to time their activity as an unconscious process and stimulating, through some association, the neurographic residua of the snake experience manifest themselves consciously in this disguised, perhaps symbolic, form as a phobia for snakes. The snake experience would still be a recurrent memory, but it would also be a manifestation of an unconscious process, the true content of which would not be recognized in the phobia. At least the disguise or symbolism would not be recognized until the unconscious thoughts were discovered by some form of psychological analysis. One might say the phobia was substituted

¹ Foreword to *Pharais* and *The Mountain Lovers*.

in consciousness for the antecedent thoughts of the unconscious process.

It is plain that the mechanism of association psychoneuroses for which I have contended does not preclude the participation of an unconscious process of this kind as a psychogenetic factor. Substantially this mechanism, or something very like it, is maintained by the Freudian school of psychology. Such a factor, if existent, might explain *why* emotional experiences persist as fixed ideas instead of subsiding, and possibly *why* a fixed idea originates as the expression of an unconscious process.

Now numerous observations and experiments have established beyond doubt that psychical experiences conserved as neurographic residua, i. e., in the unconscious, can function without themselves arising into consciousness and affect, in one way or another, the personal consciousness, and the physical processes of the body.

Thus, for example, amongst the best established of such unconscious functioning may be cited:

1. The coconscious ideas of hysteria producing various hysterical stigmata as demonstrated by Janet.

2. The coconscious ideas producing various artificial automatic, motor, and sensory phenomena, such as automatic writing and speech, crystal visions, etc.

3. Coconscious and unconscious experimental experiences which manifest themselves as post-hypnotic phenomena.

4. The unconscious residua of experiences which while continuing unconscious function and manifest themselves in conscious symbolism or in some translated form — dreams, hallucinations, and somatic phenomena.

The hypothesis of an unconscious factor of this kind then involves no new principle. The only question is whether the phenomena require such a factor in order that their mechanism may be intelligible, or whether there is evidence which compels the recognition of an unconscious factor of the kind supposed by the hypothesis. The problem is a very difficult one, but it has been greatly confused and increased by the too frequent assumption that all fixed ideas and anxiety states have the same pathology. In dealing

with mental processes there is too great a tendency to generalizations. The normal processes of the mind are too complex, the factors involved in their mechanisms are too numerous to allow us to single out specific factors or mechanisms as universal determinants of particular mental phenomena. The contributing etiological factors in perversions of mental processes must therefore be equally numerous, and the perversions themselves must vary in their pathology.

The recurrent psychoneuroses must vary in the complexity of their mechanisms, and in the etiological factors which take part. We may assume, however, without danger of error, that antecedent experiences of life are to a large extent determinants in the building of any system of perverted ideas as they are in the formation of normal systems. Accepting this underlying principle as fundamental, and accepting the antecedent experiences as the material out of which specific recurrent states are crystallized, it would seem safe to conclude that, the pure habit or association psychoneuroses, even when fear is a part of the complex, are entirely intelligible on the theory of psychophysiological memory and autosuggestion as I have explained. The history, the analysis of the symptoms, and the result of therapeutic treatment based on this mechanism support this theory.

The same mechanism is sufficient to explain any single, specific fixed phobias limited to one particular subject. In these, however, there may be secondary disturbances, and a greater or less degree of dissociation of consciousness accompanying the functioning of new fixed syntheses.

Likewise simple but specific anxiety states consisting wholly or almost wholly of anxiety and its somatic emotional manifestations may be referred to the same principle. Here we approach the hysterical state in Janet's sense, in that the specific ideas giving rise to the manifestations may be split off and coconscious. In this discussion, it will be observed, we have not touched upon the subconscious fixed ideas of hysteria as described by Janet, where dissociation is an essential if not predominating part of the mechanism.

When we come to those general phobic or anxiety states

in which the fear instinct is paramount and attaches itself to a large number of elements in the psychic life of the individual, and in which doubts, scruples, and other ideas tend to take on automatic and independent activity, though the other mechanisms which I have discussed play their part, there must be some underlying basic condition which permits such disintegration and automatisms of conscious processes. We are accustomed now, following Janet, to describe this condition as psychasthenic. But the term is merely descriptive and we know little or nothing of its real nature. We may postulate some basic alteration in the psychophysiological organism, just as in dementia præcox we are obliged to assume some basic alteration, chemical or physical, of the brain which permits the perverted mechanisms which express themselves as its psychological manifestations. So psychasthenia may be some physical alteration by which certain thresholds are lowered or raised. We may call it fatigue without defining or knowing what, pathologically, the fatigue state is.

But there is another possibility. May not the psychasthenic condition itself be a consequence of other and subconscious factors? May not antecedent psychic experiences, by continuing to function subconsciously, bring about that disorganization of mental adjustment to both the environment and the inner life which is commonly known as psychasthenia? As the form in which our ideas — our judgments, beliefs, opinions, etc. — are moulded is shaped by antecedent experiences, may not the residua of those experiences, instead of lying quiescent, take on independent and subconscious activity and not only disturb the mental equilibrium, but direct the current of thought in such fashion that it shall express their hidden meaning as in a cryptogram. A large number of observations would seem to show that in individual cases this may be so. Thus, by way of illustration, and taking a specific case I have in mind: A person passes through an acute nervous breakdown in which supposed heart weakness was a single factor. Without realizing and admitting to herself the truth, namely, that she was afraid of death, she was, without knowing why, afraid to be alone, to take exercise, to travel, or go about, even in the

neighborhood. Five years after recovery from the illness itself, she still exhibits a phobia of exertion, of entering strange places, of visiting her friends, of travel, and is almost a prisoner in her own immediate neighborhood. The illness being long passed, she does not recognize the possible relation between such a phobia and the previous illness, or even why she is afraid. In such a case there is a strong presumption, based on what we know of psychopathology, that the residua of the early fear of death continued subconsciously in hidden activity and determined the excitation of fear in connection with nearly every proposed action. The numerous fears in such a case would be only the cryptographic expression of a previous and now hidden fear of death. I think that we must accept that some such processes are basic in some psychasthenic states. But it may be again asked, what is that condition of the organism which allows such uncontrolled and subconscious functioning of past experiences, for this does not occur in the normal individual? Here we seem to be reasoning in a circle.

But if we accept the unconscious process, may we not take another step forward? It cannot be gainsaid that it is quite possible that, in the mechanism of the psychological manifestations of this general psychasthenic psychosis, the residua of antecedent psychical experiences may function in a quite special way, that is to say, take on an unconscious activity and translate themselves into consciousness in a symbolic form as secondary psychophysiological phenomena. These secondary phenomena would then bear no apparent resemblance to the original antecedent experiences. The latter might be translated into fears, doubts, scruples, and other ideas, somatic symptoms, etc., which might be even the opposites of the subconscious residua. Two processes in such a case would be at work; one a coactive unconscious process, and the other the fixed ideas and anxiety states into which the former is translated.

On the other hand, though we may with a fair degree of confidence postulate some such mechanism in individual cases, the evidence, as I weigh it, is far from being of that quality which justifies us in dogmatizing and postulating such a kind of coactive unconscious process in all cases, and

still more from postulating any particular kind of antecedent idea which universally, in all cases, is continued as the unconscious process.

As has been said of another field of applied pathology by one of its ablest students,¹ the tendency is to move faster in theorizing than the demonstrated facts and accumulated data of observation warrant.

We must be content, then, to leave the problem for the present where it is, and await further knowledge and the data of future investigations before hoping to solve the whole pathology of psychasthenic states.

¹Dr. Theobald Smith.

Second Annual Meeting of the American Psychopathological Association, at Baltimore, May 10, 1911.

The President, Dr. Morton Prince, presiding.

1. The President's address: THE MECHANISM OF RECURRENT PSYCHOPATHIC STATES, WITH SPECIAL REFERENCE TO ANXIETY STATES.
2. SYMPOSIUM ON THE PATHOGENESIS OF MORBID ANXIETY.
by Dr. Ernest Jones, Toronto.
Dr. Boris Sidis, Boston.
Dr. John E. Donley, Providence.

DISCUSSION ON THE SYMPOSIUM

DR. J. J. PUTNAM, Boston: I take pleasure in assenting to practically all of what Dr. Prince has said, except that I believe he does not go far enough in certain directions. The mechanism that he suggests for these states seems to be a reasonable one, though it is doubtful whether it is an advantage to use the term "neurograms," because it seems to me that this creates a difficulty where such difficulty might be avoided. We have to deal with these cases by psychological methods; and it is better to keep, so far as we can, on the psychological basis in conceiving them. If we once begin with "neurograms," it is hard to know where we can leave off. If we can get along without the use of the physical nomenclature, it seems advisable for us to do so. Dr. Prince had a good deal to say about the "terrifying ideas pointing back to subconscious experiences." That is one point on which I agree with him, but I think that in certain circumstances, if he should use the psycho-analytic method with thoroughness in studying his patients' cases, he would discover even more subconscious experiences than he thinks. I also accept his view that an emotional state may exist independently of the ideas that gave rise to it. This conception seems practically equivalent to that of which Freud has made so much use and for which he has adopted the term "flottievende Angst." The term, "habit neurosis," is an attractive one, and we have all employed it, but the question is whether

instead of saying "habit neurosis," we could not penetrate to a more definite etiology in each case. Dr. Prince refers to the concentration of a general sense of apprehension in the form of "single fears." That, too, I would agree with; but there it seems to me that the single fear probably stands, as Dr. Jones has pointed out, as a representative and substitute for many possible fears. The patient agrees with himself, as it were, to let one fear stand for all the rest.

Dr. Prince speaks of the unconscious mechanism as only working sometimes. I should rather put the matter in another form, as, namely, by assuming that these elaborate processes go on in the unconscious mind all the time, but only become manifest from time to time as especially in dreams.

With regard to Dr. Jones's paper, I have only to say that I think we psychoanalysts have endeavored too much to refer the explanation of all these phenomena to the genetic principle. In doing that, we range ourselves exclusively with the observers of the natural-science school, who are, as I believe, entirely too deterministic. If we do not believe that there is anything except our genesis in the earthly sense to deal with, this may be true; but I do not think that this is all that we have to deal with. In other words, I think man presents himself to us as an individual exposed to influences of two sorts. He is not only working instinctively away from a condition, but also consciously towards a goal, and I think that this fact has not been adequately dealt with.

Regarding Dr. Donley's paper, I would simply say that without his cases his argument seems to me to be of no weight. I believe that the introspective method, if carried far enough to involve philosophic introspection, is practically the only method in our hands; and I do not see why it is not sufficient. Many of us have taken cases as they have come to us, and have found that in essential respects Freud was right about them. If there are other cases in which it can be proved that the principles he proposes are not right, we should, of course, like to hear about them and have the opportunity to examine the patients for ourselves. It is hardly fair to speak of a selection of cases, because this

selection has not been made by persons working by psycho-analytic methods. They have taken every case.

DR. WILLIAM A. WHITE, Washington, D.C.: A thought has occurred to me as being pertinent to the present discussion. It would seem that Dr. Jones's and Dr. Sidis's papers might be considered together. Dr. Jones refers the etiology of morbid anxiety to the sexual instinct, and Dr. Sidis to the instinct of race preservation. It occurs to me that there is too little recognition of the relation of these two fundamental instincts to each other. The instinct for the preservation of the race is so closely related to the sexual instinct that the latter may be conceived to be a modality of the former. The instinct of reproduction has as its object to continue the existence of the individual in that of the children. Perhaps the two views from this standpoint might receive some sort of correlation. This thesis could be supported at considerable length, and is worth more consideration.

DR. TOM A. WILLIAMS, Washington, D.C.: The phylogenetic considerations just adduced by Dr. White could be discussed at great length, but I hardly think that such a discussion would be profitable at the present stage of our knowledge, because differences of opinion largely arise from differences in appreciation of the data.

Dr. Jones and Dr. Sidis refrained from presenting casuistics, for reasons that we can understand. At the symposium on Dreams, during the last annual meeting of the association, that was thoroughly done; and the cases cited are in the literature and are accessible to every one. This is not the place to discuss this question, then.

I have heard here nothing to shake the opinion that angoisse is nosologically best regarded as one of the most constant features of Janet's psychasthenia. But I do not wish further to affirm, only to question. Therefore, I ask Dr. Jones why he has made an appeal to esoteric experience, for that is a method which is apt to tend to suppress the inquiry of others, and to make them accede to the authority of him who employs the method. It is that of the supernaturalists and the mystics, who say, "Experience the mystical phase and you will understand." I wish to

protest against the use of that method of appeal in scientific study and discussion.

Again, regarding the allegations of the superlative success of the Freudian method, to which Dr. Putnam has referred, it is admitted that the method has been more successful in removing symptoms than was one of those formerly much used, viz., direct suggestion after crude analysis, for, of course, the removal of ideas by making substitutions is made possible only by psychological findings. Cases of, e.g., Janet, however, treated by somewhat naïve substitutions often relapsed; but those of Freud did not perhaps so frequently. Therefore, we may assume that the Freudian method is more thorough than the old crude suggestive therapeutics; but this is not to say that good results are an exclusive appurtenance of the Freudian method. Many of us who do not accept the views of Freud are more thorough and more profound in analysis than were the old suggestive therapists, perhaps no less so than Freud. Dr. Prince has made that clear. Data exist which indicate that Freudian psycho-analysis needs supplement by deliberate re-education and training of control.

Another affirmation of Dr. Jones, that there is a difference between morbid and normal fear, is, I believe, an error as regards any essential factor; for the physical symptoms occur as markedly in normal fear, in certain individuals, as they do in so-called pathological fear. There is, however, this difference: the morbid fear-reaction is apt to be more prolonged; because it is the tendency of the normal fear-reaction to disappear rapidly as soon as a realization of the non-existence of the terrifying thing is conceived, whereas the morbid fear-reaction is perpetuated, as Dr. Putnam has stated, by a mnesic affect due to an idea, which is always present, as explained in my paper on "Traumatic Neuroses," in *THE JOURNAL OF ABNORMAL PSYCHOLOGY*, last year. Hence, morbid fear is apt to be of longer duration than the ordinary normal fears.

Then, with regard to the distinction drawn as to the disproportion of the intensity of an emotion to the apparent provoking cause, is not this alleged "disproportionateness" merely the viewpoint of an observer, who may really have

few criteria for correct judgment until his superficial estimate is corrected by a knowledge of the facts in the patient's psyche?

The patient, however, has a special point of view; and there is no disproportion *from his point of view*, which it is our business to find out. Therefore, that is not an essential distinction as to the morbidity of any given fear. It has been said here of fear that our standard with regard to normality is too low. What, then, is the normal standard? It seems to me that this argument is only a preconceived notion and demands proof.

Now, with regard to pure Angst, I am sorry to say that Dr. Jones, in his discussion, has invoked and sustained his thesis on the analysis of pure Angst; but later has cited largely from a case of definite individual phobia to support his contentions. It seems very difficult to find data in support of the existence of pure Angst, but supposing that such could be found, could the occurrence of a few cases justify us in giving it a special category in this argument, when we know that it is so often as marked a feature of "psychasthenia"? Even though the Angst symptom may be found alone occasionally, we must remember that there are a few cases in which there is an apparent "manie" ideational symptom, without any emotional accompaniment whatever, yet no one now believes that we have the right to separate from psychasthenia the cases in which the "manie" appears to be alone. We remember that "manie" is a symptom in a much larger syndrome, in which Angst and other symptoms are also to be found in nearly all cases.

Very often, however, it is true that the phobias that a patient manifests are seemingly merely the embodiments of a general state of Angst, aroused in another way. Indeed, what Dr. Prince has called the "auto-suggestive mechanism" either creates the anxiety of the patient or reinforces it through the direct attempt to overcome emotion. Emotion fought against is really reinforced. Emotion must be conquered by overcoming the genetic, factor which is often ideation and not emotion at all.

It has been denied in this contribution that physical factors have any influence in the creation of the Angst syn-

drome. In what way, then, is the greater tendency to the formation of phobias with angoisse in such states as Graves's disease, physical atony, uremia, and surgical shock explained by persons so contending? We all know how easily the fears of the normal individual can be excited in these states, and can then become morbid. Dr. Prince has also touched upon that question in speaking of the genesis of the anxiety state of asthenia. Have we not aroused confusion by judging psychical cases by cases in which the basic factor was a physical one? Should we not be careful before generalizing to exclude these cases altogether in the investigation of psychogenetic conditions?

Now as to pathogenesis, it is true that cases arise on the basis of the early formation of an easily excited disgust; but this is not necessarily sexual. It may be excited by the temptation to sin of any kind, but the main factor in such cases is fear and shame, on account of the indulgence, *not because the indulgence was sexual*, but because it was *one that had been created into a very severe disgust-complex by extraneous influences of sociological order*, i.e., an induced affect.

DR. I. H. CORIAT, Boston: It appears to me that in the discussion of the anxiety neuroses, confusion has arisen from attributing the Angst attacks, on the one hand, to a purely sexual basis; and, on the other, to purely psychogenetic factors. There are other emotions as primitive and instinctive as the sexual, and the typical attack called the anxiety attack is not always due to repression of sexual ideas or motives. The disgust-complex, from which a number of these attacks arise, may also arise on other than a sexual basis. These abnormal fears, of which, to my mind, the anxiety neurosis is simply a reaction, may be due to the dissociating effect of any emotional shock or any series of emotional shocks. These emotional experiences need not become unconscious or subconscious. The emotional shocks may remain clearly in the consciousness of the patients. I have had that fact illustrated in two or three cases, in which a series of emotional shocks clearly remembered by the patient were followed by typical Angst attacks, the patient remembering the origin of the attacks and could clearly trace the cause of each individual attack.

The chief criticism of the Freudian school of psychology seems to be that we do not carry our analyses sufficiently far, or otherwise we would find a sexual etiology for the psycho-neurosis. In other words, if we carry our analyses and all the data of the dreams or the life of the individual back far enough, we must invariably find the repressions in the etiology claimed by Freud. I do not think that this is so, because I have reports of several psycho-analyses that only partially bear out Freud in this. In the last number of the *JOURNAL OF ABNORMAL PSYCHOLOGY* you will find a paper by me containing a very minute psycho-analysis of a case of hysteria, which, to my mind, was as complete as anything could possibly be made, even by a member of the Freudian School. Yet this analysis only partially bears out the Freudian theory, although I was dealing with a highly intelligent subject, who thoroughly co-operated with me. After two years' work on one case, if we cannot get at sub-conscious complexes of a sexual origin through the method of Freud, I do not see how much farther the analysis can be carried. I also brought out in that paper the fact that complete psycho-analysis did not cure the condition. The change from repression to free expression has only a partial therapeutic value, particularly if an automatic process has been formed. The getting at the suppressed material does not always cure the condition, if an automatism has taken place. We must break up this automatic process by some other technical method.

Anxiety states may be associated also with purely physical diseases. I have seen states of typical anxiety aroused during paroxysmal tachycardia, in the tachycardia of exophthalmic goiter, and in the cases that resembled angina pectoris, but were probably of a pseudo-angina variety.

I have had under my observation a number of cases of anxiety neurosis, on all of which I have made as complete a psycho-analysis as I should care to do. In some of these cases I found a definite sexual etiology; and in others, in which the psycho-analysis was most complete, I could not find such an etiology.

Dr. E. E. SOUTHARD, Cambridge: I should like to set down three adjectives which may serve to distinguish three

types of psychopathological process:

1. *Vestigial*.
2. *Residual*.
3. *Neoplastic*.

Under *vestigial processes* we may classify various mental phenomena of phylogenetic or racial origin, such as sex and hunger feelings, and the like.

Under *residual processes* appear ontogenetic ideas and feelings, based on occurrences within the life of the individual, or the neurograms (to adopt Prince's phrase) of a particular, acquired experience. Here would belong many of the phenomena of *angstneurosen* being considered to-day, colored though they may be with vestigial elements too.

The third group of processes which I term (for want of a better term) *neoplastic processes* I regard as incidental to certain neural processes, but by hypothesis *not* running back to racial vestiges or to residua of infantile or other early experience. May not certain contents of the mind be newly formed in the course, e.g., of brain disease, and, however colored or overlaid by vestigial or residual experiences remembered by the subject, be essentially independent of these? Consider the feelings attributed to an amputated foot! These feelings are attributed to a periphery that does not exist, though they are actually due to goings-on in the stump. Transfer this idea to the central nervous system, and it can be readily imagined how new neurograms may be, as it were, manufactured by disease. Yet these novel configurations of nerve impulse would be interpreted in terms of all available neurograms, whether vestigial or residual, and given some sort of meaning. In my own mind I have been terming the stimuli of central origin that give rise to such novel morbid experiences *quasi-peripheral stimuli*. The stump stimuli of the amputation cases refer to the lost foot as a quasi-periphery and are so unfailingly referred by the reacting nervous system. Theodor Meynert long ago offered a simple example of a fixed posture adopted, as Meynert thought, in the vain endeavor to secure muscle sensations from a certain region which had been excluded by reason of a lesion of the thalamus. May not disease graft on certain phenomena of a compulsive character,

which, however closely they may seem to correspond with significant historical facts in the victim's experience, are, strictly speaking, quite independent thereof?

DR. ADOLF MEYER, Baltimore: Not having received the papers that were offered, and having heard only the controversial part of the discussion, I limit myself to one very urgent appeal essential in the situation, viz., that we must get more accurate casuistic or experimental material as a foundation for any discussion whatever. In order to avoid our getting into endless difficulties over generalities we need simple and accurate methods of reporting and of promulgating our facts, and the possibility of having these controlled by other observers as freely as possible. The question of how to record neuroses and make them readable within the span of time that is allotted to most of us, and how to bring the actual cases under the criticism and under the observation of several individuals, is an extremely difficult one; but we have to try to make it possible for limited circles and groups of men at least — much more freely than we have been doing.

Dr. Southard's remark reminds me in some respects of the claims of those who maintain that the hallucination theory is practically exhausted by an emphasis of the peripheral irritations. We must not overlook the rôle of the wear and repair of the structures themselves in the process of activity, and such facts as Crile's observations in fear and the like. There is absolutely no doubt that we have more than merely psychical relations to consider in these cases. We also have a lowering of the resistiveness and balance of the mechanisms and structures that play a rôle. For instance, a heart neurosis will ultimately lead to a heart condition that is set off mainly from there being a lowering of the ease of regulation of the *submental* mechanisms; and, considering that, it seems to me that to view the matter purely from the psychical point of view, without considering that the mental functions are integrations of submental functions, would probably lead to endless quibbles. There is no doubt that the psychical connections are most fundamental, as they are the original links of the emotion; but other conditions have to be taken into consideration along

the line suggested by Dr. Southard or along that of Dr. Crile.

DR. PUTNAM: I should like to say a word regarding Dr. Southard's and Dr. Meyer's remarks. I sympathize with what Dr. Southard has said, and do not want my remark to be understood as opposed to these ideas. The reason that many of us have insisted so strongly on the psychical aspect of these matters is not that we deny that a person brings into the world the vestigial tendencies which one could often express best in physiological terms; it is rather that we wish to emphasize those elements in any given case with which we can deal most easily therapeutically. If there are causes that have been operative since birth, and that one has, therefore, a better chance to remove, these need to be especially considered.

DR. WATERMAN, Boston: I should like to cite two cases as illustrative of what seem to me to be definite exceptions to the states of Angst-neurosis that can be traced back to sexual disturbances.

No doubt there is a large number of cases in which sexual disturbance can be shown to be the cause of Angst-neurosis, or at least a strong etiological factor in these conditions.

Recently a patient came under my observation who is more than eighty years old, and of very strong character. He is a physician, was an army surgeon in the Civil War, and has had quite a varied career, involving exposure to many kinds of danger. He said when he came to me, that he had just been undergoing an absolutely new experience. He had never before been afraid in his life, and had not known what fear or anxiety was, but for the three nights previous he had been filled with a sense of overwhelming fear. It was more distressing than anything he had ever experienced, and he could not imagine what caused it. Examination showed that he had the following physical signs: He had had myocarditis for some time, with atheromatous arteries. More recently he had contracted an attack of influenza, with a cough, the sputum showing the presence of influenza bacilli. This coughing had thrown an extra strain on his heart, resulting in a considerable enlargement of that organ, associated with irregularity of the pulse and an almost

characteristic Cheyne-Stokes respiration, except that there were no periods of apnea. He had the physiological manifestations of fear. But the interesting point is that the sweating and the rapidity of the heart beats and the rapid respirations were associated with psychological manifestations, and he suffered from intense anxiety and mental distress, a condition which he had never experienced previously. There was a physical cause for this condition, and to me this affords a pretty illustration of the James-Lange theory.

I should also like to cite the case of a fireman who was noted in the fire department of the city of Boston as being a most reckless and fearless driver. He said that he never remembered having been afraid in his life until one day when driving to a fire his engine collided with an electric car, and he was thrown out and hurt. He was unconscious for a while, and it was a week or ten days before he recovered from his injuries. The first day that he went out the sight of an electric car brought on a sense of fear, associated with an anxious expression of the face, a rapid pulse, and sweating. These attacks continued to come with greater and greater frequency, so that he was unable to go about.

It seems to me that cases of this sort must come under another category. It is true that the theory of a subsoil of sexual disturbance may be brought forward as paving the way for such anxiety states, according to Freudian principles, yet it seems to me that we must accept these two groups of cases, namely, those with an organic basis, and those commonly classified as traumatic neuroses, as being based on different etiological principles.

DR. JONES: There are a number of questions raised that I shall not say anything about, because they do not seem relevant to the subject of the symposium. Dr. Coriat and Dr. Williams talked of the relative effects of psycho-analytic treatment. It seems to me that this is an entirely different subject. Dr. Williams put a number of questions directly to me, I think, which I should answer. He said that it had been maintained in this discussion that physical factors cannot play a rôle in the causation of anxiety states. Now one of the main points that I tried to bring

out is that anxiety states are invariably due to physical factors, and nothing else. I also laid considerable stress on the fact that this point has nothing at all to do with psycho-analysis, but can be investigated by any one, whether he has ever heard of psycho-analysis or not; and it has been by a number of such observers. It is a matter of direct, simple clinical observation. Similarly, Dr. Williams said that I have repeatedly referred to or made use of the argument that these matters depend upon an esoteric method. Well, that is really answered by my last remark. I think that I need hardly say that I have never made any such remark, either in those terms or in terms that would bear that construction. In regard to the "esoteric method," is not that just the same as saying that if you take the trouble to learn Italian you can read Dante in the original? Any one can learn either Italian or psycho-analysis. Neither is very difficult, but I wish to separate that from the question of the anxiety state, which is a matter of simple clinical observation. Dr. Williams brought up the subject of the nosological position of the anxiety neurosis, and said that he did not think it fair to separate from the broader group of psychasthenia the cases with anxiety on account of their small number. In point of fact, those of anxiety do not comprise a small number. Personally, I believe that it is the commonest disease in all medicine, so that those belonging to it could hardly be called a few cases.

The two cases cited by Dr. Waterman are, of course, susceptible of a very simple explanation, which was given many years ago by Freud himself. Such cases are very familiar to any one who has any experience in psychopathology. There is no dispute on the question of facts; it is merely a matter of interpretation. Freud laid stress on the fact that both organic changes, such as heart disease, and the other mental causes, such as fright, are important factors in the evocation of the neurosis of this type; but stated that they will never operate unless the specific cause is also present. That is a matter of simple observation. Bring forward some cases in which this is absent, and then disprove Freud's view. We have heard nothing about the sexual life of these patients.

Dr. Donley has made a number of remarks about the "nebulous reasoning" of those whom he politely calls the "disciples" of Freud. Some of these remarks are open to comment. For instance, in referring to Freudians, he said that it is a dependable sign of scientific immaturity to accept forthwith every new opinion, doctrine, or hypothesis promulgated even by authority. Has Dr. Donley ever heard of any one who has accepted Freud's views in that way? I have not. They have all gone through a period of considerable doubt and objection. I have yet to hear of any one who has forthwith accepted Freud's views. In two or three places Dr. Donley refers to Dr. Freud's "recent" suggestions. These were made nearly twenty years ago. Dr. Putnam was aware of these views for many years before accepting them.

One of the points that Dr. Donley brings forward as a criticism is based only on Freud's first paper on the subject, and he does not quote anything from the papers of Freud in which the subject is dealt with much more fully. In the original paper, Freud wrote tentatively, cautiously, and fairly. He said that in the majority of cases he had found a particular variety of sexual etiology, but that in a few cases he had not. He said that as nothing was known of the etiology of these, he ventured to set them aside for the purpose of that brief communication. He did not say that these were not cases of anxiety neurosis, as Dr. Donley maintains. The argument that Dr. Donley brings forward may be explained by this instance: When Fournier, in the early eighties, said that in a great many cases of tabes and other cases of general paralysis he had found evidence of syphilis, he did not say that the other cases, without this evidence, were not cases of general paralysis. Neither did Freud say that the other cases were not anxiety neurosis. Both said that they had found this etiology in many cases, and thought it probable that further investigations would reveal it in the rest — as in both instances has proved true. Dr. Donley says: "There is here no more justification in logic than there would be were we first to divide fractures into those caused by falling on the sidewalk and those caused by automobiles, and then to attribute the name fractures only to

those having the latter etiology." As to that, all that I have to say is that if there were no criticism of Freud's work more difficult to meet than that, we should be doing very well.

In the anxiety neurosis a particular variety of sexual disturbance (not sexual excess, as Dr. Sidis wrote) is invariably present. If this view is not true, why not disprove it by bringing forward cases in which this etiology is not present? We say that it will not arise with a normal sexual life. If it will, it is easy to prove it. No one has brought forward cases of that kind, however.

DR. PRINCE: Perhaps I may be permitted, as the subject of my address is so intimately connected with that of the Symposium, also to take part in the discussion. In what I have to say I would like to accentuate the difference between the position taken by Dr. Jones and that held by some others, especially myself. There is a difference of opinion regarding what we are trying to explain, regarding the nature of the clinical syndrome for which we are trying to find a psychogenetic or etiological factor. The position held by Dr. Jones is that these anxiety neuroses are to be classed as something distinct by themselves, as different from the phobia neurosis; that the anxiety neurosis is very different from the ordinary fear psychosis. Some of us hold a different opinion; and so long as there is a difference of opinion regarding this fact, we must expect differences of opinion as to the cause.

In my opinion an attack of anxiety neurosis is nothing more than a variant of the fear psychosis; it is an incomplete attack. Perhaps I may be permitted to repeat that in 1896, one year after Freud separated his anxiety neurosis from other states, and without having seen his work, I described the fear *neurosis* in contradistinction to the fear psychosis. The syndrome of the fear neurosis seems to me to be substantially the same as that of anxiety neurosis. It consists of the physiological manifestations of fear without specific ideas of fear. It seemed to me, then, to be a paradoxical phenomenon in that I was inclined to think that there was no psychical element of anxiety present, but in this I may have been wrong and misled by the denials of the patients. I saw, however, no reason for believing it to be in any way essentially different in mechanism from the

phobia psychosis. It was simply the physical manifestation of fear, without the fear itself.

It was possible in the cases described to find in the early life of the patients a history of specific anxiety ideas which were originally associated with the physical manifestations, but which afterwards, for reasons which I will not go into, had dropped out of the attack. There remained, however, always anxiety in the form of apprehension of an attack, which apprehension was often sufficient alone to induce an attack.

Now psychopathological experiments have shown that in certain anxiety states the specific ideas which give rise to anxiety may be entirely subconscious, and the subject not aware of them. Therefore, in any anxiety state it is not possible to exclude the presence of specific coconscious ideas without an investigation of the subconscious, and perhaps not even then. In illustration of what I mean, suppose we take a case of multiple personality in which one personality exhibits intense fear or anxiety without knowing why. In such a case you may find that there have been very specific ideas relating to particular objects and which were previously entertained by one of the other personalities. On change of personality taking place these specific ideas remained subconscious while the emotion welled up as indefinable anxiety in the altered personality. Janet, amongst others, has shown that in hysterics who exhibit anxious states very specific ideas of which the subject is not aware may persist coconsciously. Such patients then exhibit anxiety with its physiological manifestations without knowing why. On such and other grounds I personally cannot see any reason for differentiating in principle the anxiety neurosis from the phobia psychosis. I may be wrong in this view, but if I am right we should look for the same mechanism in the phobia, and vice versa. In such discussions, therefore, it is important to keep in mind the fact that there is difference of opinion regarding the nature of the anxiety neurosis.

To take another point, Dr. Jones speaks of morbid fear as being characterized by a "disproportion between the intensity of the emotion and the occasion of its occurrence,"

and in another place he says, "as the outburst of anxiety frequently takes place as a reaction to trivial occasions, which in the normal give rise to little or no anxiety, and also occurs quite spontaneously, *independently of any ascertainable external cause*, it follows that the external agents (including here also ideas of danger, etc.) cannot be regarded as the true cause of the anxiety; but at most as evoking factors."

Now in my experience, and I have examined the details of numerous attacks with great minuteness, I have been able to find in every case an exciting cause for the attack. In such studies I have always been able to bring out that the attack had been brought on by some particular excitant — by some remark overheard by the patient, some perception of or thought suggested by the environment, etc. Such a stimulant was always found to be the exciting cause of the attack. Such an exciting cause is apt to be, and perhaps generally is, forgotten by the patient. The same is true of some of the symptoms which constitute the attack. These are forgotten perhaps in consequence of the distracting effect of the great emotional disturbances. However that may be, in distraction or light hypnosis the memory of them can be recovered.

Then, too, in every case I have always found that one of the factors in producing an attack is the antecedent apprehension of the attack. This is always present, so much so that the mere apprehension itself will act as an exciting cause, and is sufficient to bring the attack to pass. From my point of view, it acts just as suggestion in hypnosis does in producing post-hypnotic phenomena. You suggest to a person in hypnosis that he will feel so and so under such and such circumstances. The circumstances arise and, acting as a stimulant, arouse these suggested phenomena. The apprehension that an attack will occur under given circumstances is an expectation and auto-suggestion that the given circumstances will produce an attack. The patient expects the attacks because having had them under certain circumstances he believes that another will take place under similar conditions. These conditions arise, and an attack is developed. Inasmuch as a number of

these symptoms are very unpleasant, such as intense anxiety, palpitation of the heart, etc., the patient naturally becomes afraid of their repetition, and he is constantly apprehensive of their recurrence.

As to the "disproportion between the intensity of the emotion and the occasion of its recurrence" I may say that it is this element of anticipatory apprehension which largely determines whether a given occasion is an adequate cause of an attack or not, whether an occasion which is inadequate for one person may be adequate for another. The anticipation converts an inadequate into an adequate stimulus.

To take a simple illustration: walking down the street or across open places may mean nothing to one person but much to another; it is not sufficient to precipitate an attack of phobia in the ordinary person, but if a person has a real or imaginary heart disease, or is liable to faint and in imagination conjures up in anticipation the dangers of collapse in the street or open places from heart disease or from fainting with expected death, without possibility of help, the proposed excursion when undertaken becomes an adequate cause of an attack. Further, if other attacks have occurred in such places the knowledge of the fact awakens an anxious expectation. It further tends to convert an ordinary innocuous occasion into a noxious one. The attacks have occurred, and it is feared and expected that they will occur again. Hence a given occasion may mean much to one person and little to another, and a sufficiently exciting cause in one person may not be in another. It is impossible to say, therefore, what is adequate as a stimulus without a thorough knowledge of all antecedent phases of the mind.

As opposed to this conception of anxiety states, Dr. Jones's contention is that in their mechanism as distinct from that of the phobias, a sexual excitation being deflected from its aim is converted into a morbid anxiety. Without entering into the question as to whether he is right or wrong I want to insist that this is a matter of interpretation. Even so is it a matter of interpretation whether the very case he cites (p. 103) as an anxiety neurosis is not a phobia.

To my way of thinking it is as neat a case of phobia, with a distinct fixed specific fear as one wishes to see. This patient, according to the account given, had had specific sexual experiences, and against the temptation to return to these she had continuously struggled for years. With intense shame and remorse she had equally intense fear that she would succumb to the temptations. The patient's own interpretation of her anxiety symptoms seems to me to have been entirely correct. It was fear with very specific fixed ideas with reference to a specific act. These specific ideas apparently occurred over and over again, accompanied by fear and its somatic manifestations. It seems to me, therefore, that this very case cited in favor of the sexual hypothesis may well be regarded as an ordinary phobia, and in any event it is a matter of interpretation.

"With a partly correct intuition," he says, "she interpreted her anxiety symptoms as a dread against once more succumbing to the temptation." How does that differ from the specific fear of a person who thinks, "I am afraid that if I go to the window I shall fall out?" Your patient thinks, "What an awful thing it would be if I should do a thing like that; I am afraid!"

In all psychoneuroses we find, I believe, that antecedent experiences have led up to them, have prepared the ground for them, and form logical reasons for the patient's specific fears; but it is always a matter of interpretation. On page 95, Dr. Jones says, "Morbid fears are the external expression of internal wishes. It is plain that every fear is but the obverse of a wish, e.g., a wish that the feared event may not happen." While it is perfectly true that every fear is the obverse of a wish, it is another thing to say that it is always the expression of a wish, meaning that there is always a present wish, and it gives rise to the fear. This is not obvious, and is a matter of interpretation, and that which he adopts seems to me to be at variance with what we know of the mechanism of instincts. If we believe that fear is a biological instinct, we must study it from the same point of view that we do all instincts, that is, as a reaction. Every instinct is a reaction to the environment or to the internal processes of the organism, and there are many kinds of

mental experiences to which fear may be a reaction. The question in every case is, to what stimulus is the fear or other instinct a reaction? To say that the fear in phobias is always the reaction to a wish because the latter is the obverse of fear does not seem to me to follow. This would imply that there was always a specific wish present, and that it is converted, so to speak, into fear.

So I think the case mentioned by Dr. Jones on page 95 is open to several other interpretations which can be plausibly constructed from our knowledge of human nature. For instance: it is said that the patient had once thought that if she did not have the child she might get a divorce and remarry. Now assuming that this is equivalent to a wish — a debatable assumption — it is highly probable that this guilty wish was momentary, and gave rise to the horrible thought, "Suppose the child should die," etc. The horror and shame of such a thought is a trauma, which tends to leave a lasting impression. This thought became a phobia, and the momentary "wish" might well have then ceased to be a factor. Why the thought became a recurrent state, a phobia, must be sought in antecedent formative experiences. Such formative influences might be the guilty consciousness that her contemplated act would be socially condemned, and her recognition of her own weakness, and that she would yield to the temptation if her child should die. Hence her apparently unreasonable fear lest her child should die and she should succumb to the temptation. The mental conditions in such a situation are complex and difficult to state in a condensed form, and still more so to elicit from the confessions of the patient. The interpretation I suggest is, of course, hypothetical, but it is a possibility that needs to be investigated.

Still, I admit that if it could be shown that there was a continuously existing wish (conscious or subconscious) for the child's death, this wish might be a factor in keeping alive the horrifying thought of the child's death, and the phobia might, in that case, be an indirect reaction to the wish. In every case the question is of the actual factors involved, and the interpretation of them. I see no reason to assume, however, that there must be a wish in every case,

nor do I think that the analysis of cases bears this out. On the contrary, I think such analyses show that phobias are more often due to other kinds of antecedent experiences, which may be beliefs, attitudes of mind, etc.

DR. JONES: I wish to speak of only one point that Dr. Prince has raised, in which we agree more completely than he appears to think. Every one would agree with Dr. Prince in denying that a wish could be converted into a fear. No one would hold that it could. Certainly, I do not. I regard the morbid fear as the biological instinct itself, but think that it attains an exaggeration of its morbidity as a *reaction* to the wish. The wish is not converted into it, but it is itself the reaction to the wish.

DR. DONLEY: When I said "scientific immaturity" I had no intention whatever to refer it to the followers of Freud. I meant no more than this, namely, that before we accept the dictum that anxiety states are practically all of sexual etiology, it may be, perhaps, not amiss to examine the grounds upon which such a doctrine is based. Reduced to its lowest terms it seems to me that the question comes to this: what are we willing to accept as an explanation for a given fact or set of facts? How far back must we push our analysis before we shall consider it satisfactory? If we pursue psycho-analysis sufficiently far I think that we can find sexual factors in most every case. But the problem is, as I see it, must we go to this extreme in every instance? Let me illustrate my meaning by reference to a case of anxiety in which, judged by the results of treatment, the sexual element was not important. Dr. Putnam will remember the patient very well, for he saw him with me. This patient, a young man, was riding on the train from Boston to Providence. He was much fatigued after a hard day's work. When the train arrived at a point midway between the two cities it ran with great speed over a number of switches. Here he had a sudden feeling of faintness and got into a panic of fear because he thought he was going to die. This experience was the point of departure for a large number of fears, one of which was inability to travel upon a train without an immediate crisis of anxiety with all its physiological accompaniments. His occupation of traveling

salesman he had to give up. The treatment as well as the diagnosis has been conducted without reference to sexual etiology, and, fortunately, with success, so far as the fears are concerned. Now I suppose in a case of this sort it would be easy enough to say that the full etiology was not laid bare, but however that may be, the patient has, by methodical re-education, acquired the ability to go upon a train without panic. If your psychological principles lead you to maintain that it is necessary to search for some sexual factor, that is one thing; but if you are willing to accept what seems in practice to be most obviously the operative cause, that is quite another thing. In a word, the problem reduces itself to the question of what sort of an explanation will satisfy us. It is not a difficult matter to construct an explanation which itself is quite as much in need of explanation as the thing it is put forward to explain. May we not in our interpretations read into patients things that in reality are not there?

(The discussion of the following papers will appear later as they are published.)

3. Dr. J. J. Putnam (Boston): THE NEED OF GREATER EMPHASIS ON THE CONSTRUCTIVE SIDE OF PSYCHO-ANALYTIC WORK.
4. Dr. E. W. Taylor (Boston): THE POSSIBILITIES OF A MODIFIED PSYCHO-ANALYSIS.
5. Dr. A. A. Brill (New York): THE MECHANISM OF COMPULSION NEUROSES.
6. Dr. I. H. Coriat (Boston): A THEORY OF SLEEP.
7. Dr. Tom A. Williams (Washington): THE PSYCHO-GENESIS OF WRITER'S CRAMP, AND OTHER OCCUPATION NEUROSES.

ABSTRACTS

THE INVESTIGATION OF COMPLEXES. *Ritterhaus. (Die Komplexforschung. Tatbestandsdiagnostik.) Journ. f. Psychol. u. Neur. Band xv, S. 61-83, and 184-220. Band xvi, S. 1-44.*

THIS extensive and thorough work is one of very great value, and one that no future investigator on the subject can dispense with a careful study of. The main object of the present monograph is to determine the value of word-association tests for legal purposes, i.e., by the discovery of specific guilt-complexes;¹ it forms part of a still more extensive investigation, other sections of which will be published later. Out of a great number of cases studied seven are related in detail.

The question of the value of the method for criminological purposes is definitely answered in the negative, and the author is not hopeful that any future modifications of it will increase its usefulness in this sphere. The purpose is too gross, the method too fine; it is like trying to weigh sacks of flour with an apothecary's scale. The obstacles of applying it to legal work are conscientiously set forth. A few of the main ones are the following: With a large number of cases the question is greatly involved by the subjects being complex psychopaths, so that they do not lend themselves to the solution of over-simplistic problems; many crimes are from their nature unsuitable for the purpose; individual differences are too great, in that many guilty subjects have only slight guilt-complexes, while many innocent subjects have strong ones, and so on.

Many an investigation, however, has proved successful from its very failure, the discoveries made during it proving to be far more valuable than the object vainly sought for; one has only to think of the birth of modern chemistry in the attempt to find the philosopher's stone and other magical substances, and even in present-day science instances of important discoveries made in the course of a baffled investigation are far from rare. The present case is a striking one in point. Though we may not be able to place the association method at the service of detectives — perhaps the questions they attempt to answer are too falsely put to be capable of scientific solution,— we have incidentally learned the use of it for other purposes that are of fundamental value, both to psychology and to psychiatry. Referring to a long list of hitherto unsolved problems in these fields, the author says: "Bei der Beantwortung aller dieser Fragen wird, das ist meine

¹This term is of course used in the Bleuler-Jung sense.

festen Ueberzeugung, die Komplexforschung — wenn auch selbstverständlich nicht die ausschlaggebende — so doch sicherlich eine äusserst wichtige Rolle zu spielen haben." The credit for having perceived the true sphere of the method, as well as for having actually elaborated it with brilliant success, belongs, as is well known, to Jung and his pupils. In view of this transformation Rittershaus proposes to replace the clumsy expression *Tatbestandsdiagnostik* by the more accurate one of *Komplexforschung* (investigation of complexes).

The work in question was carried out at the anti-Freudian clinic of Erlangen. It is therefore all the more striking that the author has signally confirmed the truth of Jung's investigations that have placed the principles of psycho-analysis on an experimentally demonstrable basis. In a valuable historical review he penetratingly criticises the objections that have on different sides been raised to those principles, e.g., to Jung's objective complex-signs (*Komplexmerkmale*). His exposure of Schnitzler's technique in the latter's attempt to disprove the significance of these is quite scathing, and illustrates the extraordinary superficiality of Jung's opponents; none can again have the hardihood to quote with approval Schnitzler's work, as has often been done in the past. This whole section of the work especially deserves to be carefully read in the original.

Mention should lastly be made of a tentative effort on the part of the author to base a characterology of the normal on the Kraepelinian classification of the psychoses; this is interesting, though not original, but how far it will prove fruitful must be left to the future to decide.

ERNEST JONES.

THE MENTAL CHARACTERISTICS OF CHRONIC EPILEPSY. By Ernest Jones. *Maryland Medical Journal*. July, 1910.

JONES, in this interesting paper, points out that the mental characteristics of the interparoxysmal period of epilepsy are as important for a proper understanding of the disease process as the epileptic attacks themselves. The mental state of chronic epilepsy shows not only a reduction of the general intellectual capacity, leading to a more or less profound dementia, but also a poverty of ideas and a narrowing of the field of interest. The memory also suffers and the resulting amnesia has several important characteristics, such as a forgetfulness of personal details, the lack of confabulation to fill up the gaps in memory, as occurs in Korssakow's disease, and the ability to recall the forgotten period

through means of certain technical devices, such as hypnosis. He holds, contrary to the usually accepted view, that the epileptic amnesias are due to a defect of reproduction and not of conservation. This view is directly opposed to that of the reviewer, which is that epileptic amnesia is an amnesia of conservation, while in hysterical amnesia it is reproduction which is at fault. Therefore, while it is fairly easy to restore the memories in hysterical amnesia, this restoration is impossible in epileptic amnesias, because in this latter condition there is no conservation. The epileptic state of consciousness which leads to amnesia is such that nothing is stored up and hence nothing can be reproduced. In the reviewer's experience, when memories have been restored, in cases alleged to have been epileptic amnesia, further study has clearly disclosed the hysterical nature of the disease. Grave doubt, therefore, may be entertained, whether the reported cases of the restoration of memory in epileptic amnesia were not hysterical in origin and not epileptic at all.

The author goes on to point out various other mental characteristics of the chronic epileptic: The periodic alteration of mood and behavior, leading at times to outbreaks of irritability and violence, is very characteristic of chronic epilepsy. Another important indication of the disease is the egocentric attitude. The association reactions in epilepsy resemble in general those of imbecility, and yet show certain essential differences, such as monotony of response, poverty of vocabulary, and great delay in reaction time. The sexual activities of epileptics may be of a turbulent and even violent nature. The sexual life of the adult epileptic has many characteristics of the sexuality of childhood, particularly the symptom termed auto-erotism by Havelock Ellis. An account is given of Maeder's work on epilepsy, in which an attempt is made to correlate the symptoms with other abnormal processes, particularly the psycho-sexual life, as has been done for hysteria and dementia præcox. The author concludes by pointing out that investigation of the deeper sources of the mental characteristics of epilepsy may prove of value in penetrating into the fundamental nature of epileptic disturbances.

I. H. CORIAT.

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PSYCHOANALYSIS OF A MIXED NEUROSIS*

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THE literature upon the subject of Freudian psychoanalysis is already extensive, and one might expect that, from a statistical examination of it, some fairly definite conclusion could now be reached as to the therapeutic value of the method described. This, however, is not the case. A large group of foreign writers report many brilliant results from the employment of psychoanalytic procedures, while writers in this country, with a few notable exceptions, report very meager results or absolute failures. How are we to account for such discrepancies?

If B, repeating scientific experiments described by A, reports results which differ from those claimed by the first experimenter, two questions immediately arise. First: Were the results correctly observed and correctly recorded in both instances? Second: Were the experiments performed in exactly the same way in both instances? We may regard the reports of psychoanalyses as records of scientific experimentation and interrogate these records in the same way. Are, then, the results of psychoanalyses, so called, correctly observed and recorded? It is fairly certain that, in general, they are. Though we take into account the over and under estimation of results due to over

*Read before the New York Psychoanalytic Society; April 25, 1911.

enthusiasm on the one hand, and to prejudice on the other — though we consider the statistical errors that may be due to mistaken diagnoses, cases “that would get well anyway,” false reports, and all other possible factors — still we cannot, by any of these means, account for the great differences that exist between the claims of different writers. If, however, we examine the technique employed by the various observers, and if we endeavor to ascertain what relation there exists between incorrect technique and poor results, we immediately find matters that appear to be amply sufficient to account for the wide variation in results obtained by different operators. We find, first, that practically all writers who report success with psychoanalysis have followed strictly the technique of the Freudian school. We find, secondly, and without exception, that those who have failed to obtain good results give evidence from their own writings that they have not adhered to Freudian teachings.¹ They either show ignorance of the method, an attempt to improve upon it without having mastered it, a lack of skill or of perseverance, or the employment of some method of procedure that, from the Freudian standpoint, is not psychoanalysis at all. In the cases of failure reported, one invariably finds either evidence that repressed complexes were undiscovered or else only partly brought into consciousness, a failure to explain the symptoms from the patient’s associations, arbitrary explanations of the symptoms without reference to the patient’s associations, or, in some instances, no analysis at all. I have yet to see in the literature the report of a failure after the complete analysis of a psychoneurosis.

The advocates of psychoanalysis do not claim that the method is a panacea for psychoneurotic disorders. All are willing to admit that there are many cases which for various reasons, cannot be analyzed. It is claimed, and justly, I think, that the method is one that, from the point of view of results, surpasses all other methods of treatment of the psychoneuroses, and it is hardly fair, either to the profession or to the neurotics, that conclusions as to its therapeutic value

¹These remarks do not apply, of course, to analyses in cases of grave insanity.

should be drawn from failures that are obviously due to faulty technique.

The literature in English upon Freudian psychology will soon be so large that familiarity with a foreign language will not be requisite to those who wish to become acquainted with the theory and practice of psychoanalysis. However, there are, as yet, very few complete analyses published in this country, and it is upon this account that the following case is reported. Theoretical and technical discussions are not within the scope of this paper, and for such the reader is referred elsewhere (1).

The case I wish to present is that of a single woman, twenty-eight years of age, an American by birth, and a journalist by occupation. She was referred to me by Dr. Swepson J. Brooks, of Harrison.

Family History.—She was one of a large family of children, of whom none, except herself, gave any particular evidence of nervous or mental disease. Her father died as a result of cerebral hemorrhage some four years before I first saw her. After his death his affairs were found to be in a very disordered state, and this, with other matters that will appear later, indicate that he suffered from some form of psychosis. The patient's mother is living and well. There is no further psychopathic history in the family.

Personal History.—She had had measles at seventeen, a curettage for dysmenorrhoea seven years before, and a laparotomy for appendicitis four years before. One ovary was removed at this time. She was frequently laid up with coughs, colds, slight gastric disturbances, etc., but had had no other illnesses of any importance. Her use of tea, coffee, and alcohol was very moderate. There was no history of venereal disease. The patient had always been of a shy, reserved, moody disposition. Since she was eleven or twelve years old, she had been in the habit of taking two or three times the dose of any medicine that was prescribed for her, and she was generally careless about her health. She seemed to have been very fond of her father, but she was inclined to be constrained and unresponsive with every one else, her mother in particular. The patient had a good education, was well read, and very intelligent.

Present Illness.—As has been said, the patient's father died after a long illness, some four years before she first came under my care. Notwithstanding the fact that she had been fully prepared for his death, she became depressed after it and her depression, instead of subsiding as time went on, became progressively more profound. She left home a few months after her father died and took a position in a Western city, but she had been at work only a short time when she was operated upon for appendicitis, and, while convalescing from this operation, she made an unsuccessful attempt at suicide by taking a large dose of morphine. Her depression continued to increase, she cried a great deal, and was most unhappy. In addition there developed other symptoms of a compulsive character. She began to be extremely sensitive, any chance remark that could be taken as uncomplimentary to herself was immediately so construed, she felt that she was unattractive, that no one liked her, and that she was not wanted at home. She also developed a number of compulsive desires. She continually desired to make herself sick and, with this idea in mind, she exposed herself to cold in the hope of contracting pneumonia, she cut her wrist and rubbed an indelible pencil in the wound with the idea of developing septicemia; she went out of her way to visit those sick with contagious diseases in order that she might become infected, etc. As time went on she fixed upon typhoid as the disease that she desired above all others; and, by every means in her power, she endeavored to contract this malady. She visited her brother in the hospital when he had typhoid, and tried to kiss him in order to acquire the infection; she drank a bottle of water that had been in the cellar for an unknown length of time in the hope that it might contain typhoid germs; she wanted to become a nurse in order that she might have access to typhoid patients and so contract the disease. This desire for typhoid was described as being very intense. She prayed for typhoid; if she heard of any one's being taken sick with typhoid she immediately thought, "Oh, why couldn't that have happened to me? Why couldn't I have had that good luck?" etc.

She also manifested a compulsive desire to take drugs at every opportunity. It seemed to make very little difference to her what drug she took, for, on different occasions, she has taken aromatic spirits of ammonia, trional, veronal, adrenaline, hyoscine, cough mixtures, carbolic solution, sweet spirits of niter, morphine, rhubarb, and various other substances. She frequently had a desire to commit suicide, and she stated that before she came to me she had made six attempts, all but one of which were by taking drugs.

The patient's condition finally became so bad that she was forced to give up her work and return home, but the change brought no improvement. No sooner had she reached home than she felt that she would be better away from her family. Several times she secured employment that would keep her away from home, but each time she became sick, or something arose that gave her an excuse to get back. She was finally sent to an institution and remained there under the care of Dr. Brooks for a year. She improved very considerably during this time, though, while there, she made an attempt at suicide by hanging herself with her bedclothes. She left the sanitarium a few months before I first saw her, but she very soon lost all that she had gained while there, and made another suicidal attempt. From the beginning of her illness she suffered very much from severe fronto-occipital headaches and she was inclined to sleep poorly. Her chief complaints were, profound depression, compulsive desires, a tendency to compulsive fears, and headache.

Physical examination showed some anemia, a rather marked facial acne, some tremor of hands and tongue, absence of conjunctival and pharyngeal reflexes, and very active tendon jerks, but nothing else of importance.

Analysis.—While this patient was under the care of Dr. Brooks, he suspected the existence of a sexual factor in the case and, by suitable inquiries, at last elicited the following information. The patient's father, who, as has been said, was not mentally sound, had been in the habit of requiring her to sleep with him whenever her mother was away from home. She had been first called upon to

perform this duty when she was about eleven years old. On such occasions her father masturbated her, and it appeared that through such means she had learned to masturbate herself. He had practiced masturbation upon her whenever an opportunity occurred up to the time of his death. Before he died she had masturbated occasionally, but after his death her indulgences became much more frequent, and continued in spite of her most earnest endeavors to overcome the habit, and in spite of the most bitter self-reproaches and self-condemnation. Her father had attempted coitus with her a few times, but these attempts always caused her such pain that he was forced to stop.

While her father was living she had no love affairs of any importance, though she indulged in a number of flirtations at various times. Apparently her only object was to win admirers from some one else, and when this was accomplished she very promptly lost interest. While in the West, after her father's death, she fell in love with her employer, a married man much older than herself. She allowed him to fondle and caress her, and finally permitted him to masturbate her. He attempted coitus once or twice, but she always prevented him at the last moment. There was no history of any other affairs worthy of note.

Dr. Brooks's investigations also disclosed other symptoms that she had heretofore concealed. She had an obsessive fear that she would never be married, and hence, her condition would always remain the same — that is, she felt herself doomed to masturbate as long as she lived, for she seemed powerless to overcome the habit. She had another obsession, namely, she feared that she was repulsive, not only to those who knew her, but also to perfect strangers, — people she passed on the street, for instance.

The history thus far not only gives reasons for her depression, but it also presents a certain amount of logical basis for some of her fears, and for her wishing to put an end to herself. One might almost be tempted to feel that her fears were too logical to be regarded as obsessions. However, the patient was conscious of their pathological character. She realized that they were imperative ideas

which could not be reasoned away or controlled. It must be borne in mind, also, that they persisted in spite of all attempts, both on the part of Dr. Brooks and of myself, to remove them by re-education.

The patient was sent to me in the hope that, by the use of hypnosis, her compulsive symptoms might be removed, and, possibly, her habit of masturbation influenced sufficiently so that she would be well enough to support herself and cease to be a burden to her family. She proved to be quite a good hypnotic subject, and therapeutic suggestions always produced temporary relief, but after some weeks of such treatment, as she was really no nearer to being well than in the beginning, except that her headaches had ceased, all hope of curing her by suggestion was abandoned and the time was devoted to psychoanalysis.

It is impossible to record the further analysis of this case just as it was made, as such a procedure would necessitate an enormous expenditure of time and lead to numberless repetitions. I have, however, endeavored to indicate the important trains of association as nearly as possible as they were brought out, and with only such rearrangement as is required for a coherent narrative.

The most striking and bizarre symptom presented by this patient was her compulsive desire for typhoid, and this was the one that it was first attempted to explain. When she was asked to fix her mind on the thought of typhoid and tell what occurred to her, she remembered that some three years before she had heard that often, when persons had this disease, their hair fell out, and that it sometimes came in another color. She thought her compulsive desire dated from the time she had heard this remark. She then recalled that a short time before her appendix operation, about four years before, while she was doing up her hair before the mirror, she had noticed on the bureau a bottle of peroxide that she had been in the habit of using in cleaning her teeth. She had suddenly felt a desire to put some of it on her hair, and she had immediately done so, without having the slightest idea as to why she performed the act. On several other occasions the same thing was repeated. I asked her if she was dissatisfied with the color

of her hair and she assured me that she was not, and that, on the contrary, she was rather proud of it. She said that she was in complete ignorance as to the motive that prompted these acts. She added that every time she had acted upon this impulse she had felt afterward that she had done "something awful"; that she had committed a terrible sin, something worthy of the greatest reproach. The amount of peroxide she had used was very small, and it had bleached only a small spot on her hair, but she was very much ashamed if any one saw it, and always arranged her hair so that this spot would be concealed.

It seemed quite evident that this bleaching of her hair was a symbolic act (2), and that her apparent excess of self-reproach concerning a matter, in itself so trivial, would doubtless present no incongruity with the deeper significance of what she had done. That is, her emotion was certain to be in perfect accord with what the act symbolized. In these symptoms, as in dreams, "the effect is always right." (3)

When she was asked what was suggested to her by the idea of bleaching one's hair, her associations were, in substance, as follows: She thought of a girl she had once known who was accustomed to bleach her hair. She recalled that this girl eventually became a prostitute. She thought of seeing another girl who was said to be a prostitute. This girl was a blonde. She said she understood that prostitutes went out upon the street and asked for what they wanted. Then she spoke of a fear that she had not mentioned before, viz., that she feared that sometime she might go out upon the street and do the same thing, and finally she spoke of the fact that one of her sisters was a blonde.

Evidently bleached hair was associated in her mind with prostitutes, and it seemed worthy of note that the thought of her sister should follow so closely upon this unpleasant theme. She was therefore asked to tell everything that occurred to her in regard to this sister. She replied by saying that she considered her sister very attractive, and was even somewhat jealous of her, for it had often happened that as soon as a young man began to pay attention to herself, this attractive sister would step in and lead the

prospective admirer away. She reproduced a number of memories of such occurrences and then came to a standstill, and said that she could think of nothing more. When it was insisted that there must be something in her mind, she said that she merely thought of hearing her older brother call to this sister about the house. Then she went on to say that this sister and brother were very fond of each other, that they were great chums, that they always sat together at table, etc.

The analysis of the following dream served to clear up the situation. The dream was related as follows: "*I was on a hill with my blonde sister. At the foot of the hill was a town, and, upon looking down into it, I saw a peculiar-looking man who seemed to be a pickpocket. The man had a blue face, his chin was ribbed like that of a monkey, and he had a large wart on each side of his head where his ears should have been. He was going through a crowd of people and putting his hand in their pockets. Finally he came near me, and as I walked past him, he put his hand in my pocket and I awoke frightened.*"

Analysis.—The fact that the dreamer awoke in fear immediately leads one to suspect a sexual latent content in this dream (4). The hill, the town, and the crowd of people reminded the dreamer of the town of Oberammergau, where the Passion Play is held. She and her sister had visited this place during the preceding summer, and she remembered that there were signs about to beware of pickpockets. The dress and figure of the peculiar man suggested her older brother, but she was sure she had never seen such a face before. When asked to fix her mind on the man's face and tell what occurred to her she said: "I think of a monkey's face—I saw a monkey in Bronx Park that had a blue face—(after a pause) That isn't the only place he's blue, either." (The monkey has a bright blue scrotum.) After another considerable pause she said: "Monkeys are just like men, aren't they?" When asked what she had in mind when she made this last remark, it finally came to light that she had seen a monkey masturbate. When she concentrated her mind upon the warts that the man had upon each side of his head, she suddenly thought of a scene

of several years before: A certain man, a relative of hers, was helpless as the result of an accident. She had assisted in giving him a bath and had seen his genitals exposed. It occurred to her at the time that his scrotum looked like two large warts.

The peculiar features of the pickpocket can now be explained. As we know, the genital zone rarely appears in the manifest content of dreams (5). Instead, the face, by virtue of a somewhat similar conformation and arrangement of openings and protruberances, is used to represent this tabooed region. The face in this dream is made up of the genitals of a monkey and those of a man, and she dreamed that she saw the sexual organs of a male.

The pickpocket in her dream is a composite, to which her brother, another male relative, and a masturbating animal have contributed. This fact immediately gives rise to the suspicion that these three individuals must have had some common resemblance that determined this fusion. Therefore she was asked what occurred to her in reference to the relative whom she had bathed. She then remembered that, when she was about nine years old, this man had masturbated her several times. At that time she was living in the country and her home was at the top of a hill. At the foot of this hill was a town, just as in the dream. The dream apparently combines the memory of this place with that of the similar town and hill at Oberammergau. The reason for this combination will become evident later.

As has been shown, two of the individuals that go to make up the pickpocket were associated in her mind with the idea of masturbation, and this naturally led to the conclusion that the third individual, her brother, might possibly possess, for her, similar associations. Her attention was called to this fact and she immediately displayed considerable confusion and finally stated that she had known for several years that her brother had practised masturbation upon her blonde sister.

For those familiar with dream symbolism, her dreaming that the man put his hand in her pocket requires no analysis. The pocket is a frequent dream symbol for the vagina (6). However, it may be of interest to record what associations

determined the symbolism in the mind of this patient. She was asked what "pocket" suggested to her and she remembered that, on the evening she had the dream, she was playing cards with some friends, and during the game her older brother was lying on the sofa in the same room. He had removed his coat and hung it on a chair near her. Some one wanted an article that was in his coat and the patient, to save him the trouble of getting up, went through his pockets in order to find it. She admitted that doing this had given her a certain erotic feeling, and that she had pictured to herself what would happen if her brother should put *his* hand in *her* pocket. Her resistance gave way after this admission, and she confessed that for some time she had been repressing erotic feelings toward this brother, that being alone in the room with him, handling his clothes, and the ordinary family caresses had aroused a desire for him to masturbate her. Her dream is the fulfillment of such a wish. Her going through his coat was the event of the day that had incited the wish and had contributed part of the dream material. The memory of the town of Oberammergau, where she had seen signs in reference to pickpockets, is combined with a scene in this country, where she had been masturbated. The words "Passion" and "Play," which might suggest masturbation, may have had something to do with this fusion. The brother is disguised through the condensation described. Her rival, the sister, appears in the dream ignored by the amorous brother.

The selection of the brother as a sexual object shows the influence of the parent complex very clearly. Dr. Brill has referred to this matter in his paper (7) before this society, and Freud has written of it in the *Jahrbuch* for 1910 (8). The patient had endeavored to transfer her libido from her dead father and, in doing so, had selected a new sex object who bore as strong a resemblance to the father as possible. The older brother in appearance and manners was very like the father. He was engaged, she had known of his having sexual relations with other women, and of his relations with her sister. Her jealousy of these rivals reproduces the jealousy of her mother. The discovery of the brother complex afforded an explanation of her bleaching her hair,

and also a partial explanation of her desire for typhoid. She wished to have blonde hair in order to be like her sister, to attract her brother, and to be masturbated by him. If she had typhoid and her hair fell out, it might be blonde when it came in. Her fear that she might solicit on the streets as prostitutes do is also explained. She really feared that she would ask for what she wanted, *not* on the streets, but at home. We also see why she felt that she would be better off away from home and why she always made some excuse to get back when she was away. Her conscious mind prompted her to escape from the place of danger, but unconscious forces led her back to the brother she loved.

We have seen that she wished to have typhoid because it might make her a blonde, but there must have been some additional reason, for she wished to have other illnesses beside typhoid. Why did she wish to be sick at all? She happened to mention that, when she struggled against the temptation to masturbate and temporarily succeeded in suppressing it, the wish to make herself sick or to take drugs very often followed, and hence it was considered quite possible that such desires were merely substitutes for the desire for masturbation — that is: to make one's self sick — to harm one's self — to abuse one's self. This proved to be correct, for when she was asked to tell when she first had this symptom, she remembered that a certain teacher, to whom she had confessed the habit when a small girl, had been very severe with her, and had said that if she continued her practices she would become insane. (It is worthy of note that this patient had no fear of insanity.) When she was asked what else the teacher said to her, she was unable to remember at first, but, finally, it came to her that the teacher had exclaimed, "You are making yourself sick by this — you might as well take poison!" Her desire for drugs and for illness began shortly after this conversation, and it seemed quite evident that the teacher's words determined a substitution such as has been indicated. In spite of this explanation the symptoms continued, however.

She was then asked to try to imagine what would happen if she really did become sick, as she desired. She responded by describing an imaginary picture of herself

seriously ill — of the doctors saying there was no hope for her — of the sorrowing family, and, finally, of a surprising turn for the better, and her complete recovery, not only from the illness, but also from all her troubles and from the habit of masturbation in particular. She then told me that for about four years she had felt that if she could get very sick and almost die, but then recover, she would thereby be freed from the habit that so distressed her. When asked what more occurred to her in connection with this idea, she remembered that when she had measles at seventeen she was very sick indeed. As she was beginning to convalesce, her father stood at the foot of her bed one day, and said, "This has made you very sick, but when you are all over it you'll feel like a new person," and, in retrospect, she thought that these remarks had something to do with her belief that a serious illness would cure her of masturbation. After fixing her mind on this scene with her father, it suddenly occurred to her that he had followed up his remarks by masturbating her. It appeared, therefore, that her forgetting had been of a selective order — that she had remembered the least significant part of the incident — for there then followed a series of memories of various little illnesses that had confined her to bed. On all these occasions her father had tended her most solicitously, would allow no one else to look after her, and had invariably wound up by masturbating her. This adds still more to the explanation of her sickness compulsion, for it then appeared that her illness or her mother's absence from home had afforded the best opportunities for her father's manipulations, and she further admitted that, at various times, she had feigned illness in order that she might be gratified by her father. She had a compulsive desire to be sick, therefore, because sickness had been a means of achieving sexual gratification. With her, taking drugs and making herself sick corresponded to devices of courtship.

This explanation relieved the symptoms to a considerable extent, but did not serve to remove them wholly, thus pointing to the probability of other and deeper determinants that were still to be sought. In addition there were six suicidal attempts to explain. Now it appeared

very singular that she should have made six *unsuccessful* attempts. If she had really and almost constantly wanted to commit suicide, as she claimed, she could very easily have done away with herself long before. One can hardly avoid recognizing that her alleged attempts had some other meaning — that they were symbolic acts or something of the kind. Moreover, the fact that she had used drugs in five of her six supposed attempts leads to the conclusion that these acts were allied to, and probably resulted from the same cause as her compulsion in regard to drugs and illness. A short dream of the patient finally furnished the key to the puzzle. *She dreamed that she saw a man and wife who appeared to be quarreling. The man began to strike the woman. She (the dreamer) attempted to stop him and awoke somewhat frightened.* The analysis is merely outlined. The man reminded her of an actor she had seen in a play on the day of the dream. This man was big and handsome and quite took her fancy — she said he seemed to be her ideal of a man. In the play he was rather rough with his wife, but did not beat her. She also thought of a man she knew in the country who, also, somewhat resembled the man in the dream. He was married, and he and his wife seemed to be very happy and were looked upon as an ideal couple until it turned out that he was a wife beater. The patient had once seen him pursuing his wife with a horsewhip, and she had tried to interfere as she did in the dream. This reminded her that her father had once pursued *her* with a horsewhip and had finally caught and whipped her. Then followed other memories of punishment inflicted on her by her father, and the train of associations led back to the memory of something that had taken place when she was six years old. She was in the country and saw horses bred. One of the men who was superintending the operation was whipping the mare. It then appeared that she had been greatly excited by what she saw and that she had indulged in masturbation. This admission also brought to light that she was even then acquainted with the habit, for she recalled that another girl had taught it to her just before the horse episode. It is therefore evident that ideas of punishment and of eroticism

were associated in her mind, and that the man in her dream was a sadistic composite, probably representing her father.

The woman in the dream strongly reminded her of the wife she had seen pursued and, when she was asked what the thought of this woman suggested to her, she confessed, after the greatest hesitation, that she had been sexually excited by what she saw, and that she had rather envied the beaten wife. This means, of course, that she identified herself with this woman and, therefore that she was masochistic (8). The dream is a masochistic fancy—an attempt at the fulfillment of a sexual wish to endure pain. In the dream she tried to prevent the beating, but this merely represented the resistance of her consciousness against that form of gratification.

The analysis of this dream broke down the patient's resistance, and she reproduced a great number of memories showing a masochistic trend. Her father had always been very rough with her, and though she appeared to resent this, it had given her a secret satisfaction—anything relating to cruelty caused her sexual excitement—even the pain of menstruation had produced erotic emotion (one reason she wanted to be "sick," perhaps) and so on, until she related that her father had often caused her pain in masturbating her, and that this had intensified rather than diminished her satisfaction. She also stated that she very frequently employed some hard or rough instrument in masturbating in order to make the act painful, and at the same time formed masochistic fancies in which she was the recipient of rough treatment at the hands of her lover or of her brother.

The disclosure of this masochistic trend completed the explanation of her desire for drugs, for illness, and for self-injury. She turned to illness, not only because sickness had afforded her opportunities to be masturbated, but also, and perhaps mainly, because she enjoyed being sick—because suffering, *per se*, gave her sexual pleasure. Her taking of drugs and her supposed suicidal attempts were merely attempts to make herself sick, and were, at bottom, masochistic acts. This trend also explains why she thought every one mistreated her, why she was so sensitive, etc.

She wished to think herself abused, for such a thought gave her a vague erotic satisfaction.

There remain two other symptoms to be explained, namely, her fear that she was repulsive and her fear that she would never be married. These fears appeared to have a certain causal relation to each other — that is, she felt that she would never be married *because* she was repulsive. Another factor, no doubt, was that she was vaguely conscious of being attracted only to those who resembled her father in that they were not free to marry — as her lover, who was married, and her brother, whom she could not marry, and whose affections were fixed elsewhere — that is, the patient could love only when she had a rival whom she could not displace — hence, she would never marry. The fear that she was repulsive was, in part, a logical result of masturbation and the other matters previously related, but such explanations did not serve to remove either of these fears, for, as will be seen, they had further determinants.

The further analysis of these two symptoms was, of course, made in the same way as that of those already discussed, but the various steps will be omitted here, and the explanation limited to a mere statement of the facts brought out. The two fears of the patient, that she was repulsive and that she would never be married, had a deeper determinant in common, but each had a separate superficial one. The deeper determinant is as follows: When the patient was six years old, she and a girl older than herself had seen two dogs copulating. The older girl then suggested that they “play dog,” and, thereupon, they masturbated each other. This was the patient’s first introduction to onanism. This experience gave the patient the idea of allowing a dog to lick her genitals and to attempt coitus with her. These practices continued until she was about sixteen years old.

She then heard a tale about a woman who had given birth to a child that had the head of a dog. This woman had a female dog, of which she was very fond, and it was related that the husband said that if this dog had been of the male sex he would have left his wife. This story, together with the remarks made at the time upon the repulsiveness

of zo-ophilic practices, made a great impression upon the patient and caused her to abandon this form of gratification, partly because she then considered it repulsive and partly because she feared that the dog might impregnate her, a thing she believed possible. In connection with the remarks the husband in the story was said to have made, it occurred to her that if what she had done were discovered, or if the dog should impregnate her that, certainly, she would never be married.

We now see that the two fears under discussion were determined by a repressed zo-ophilic wish. They represent a compromise between consciousness, which repudiates the wish, and the libido, which seeks gratification. In one instance the fear is attached to the associated idea of marriage, and in the other, to the associated idea of repulsiveness. For obvious reasons these fears often arose when the patient happened to see a dog.

For each fear there was a superficial determinant. When the patient had her appendix operation one ovary was removed. Just after the operation she spoke to the nurse about this, and the nurse advised her not to tell any one that she had had an oophorectomy, as such an operation, in a single woman, often gave rise to comment. The patient did not understand what kind of comment was meant, but a few days later, she overheard a patient telling of a young woman who had had both ovaries removed. The young woman had been engaged, but, so the narrator said, after the operation she lost all her sexual feeling, ceased to menstruate, "dried up," and her fiance broke the engagement. This caused our patient to fear that she might suffer a similar fate, and this fear was increased when, as time went on, she found that her menstrual flow was less in quantity than it had been before the operation. She consulted her family physician about this, but though he told her that even a part of an ovary was as good as two, she was unable to believe him.

The superficial determinant of her fear of being repulsive was easily discovered when she disclosed the fact that this fear was quite apt to occur in the presence of men, and especially of elderly men. This fear often attacked her

in street cars. She would feel that men must be looking at her and thinking how repulsive she was. It finally appeared that these men inspired erotic thoughts and desires in her, and that her fear was a projection of her own sexual wishes upon these individuals. In other words, that which she disliked and considered repulsive in herself, she treated as if objective, and gave vent to her feelings by disliking and fearing it in some one else.

One of her suicidal attempts differed from the rest. When she was in the institution she tried to hang herself while in all the other alleged attempts she had used drugs. Usually the desire for self-injury came upon her gradually, and had lasted as long as two days before she gave way to it, but this time, she says, the impulse came upon her suddenly and she responded to it without hesitation or consideration. Analysis showed that she had become very much attached to a nurse in the sanitarium, and that her attachment had a pronounced sexual element in it. We should rather expect some manifestation of the homosexual component of her sex impulse inasmuch as her libido was first awakened by a female. The impulse to hang herself came upon her when, upon looking out of her window, she beheld this nurse displaying considerable affection toward another patient. This suicidal impulse (9) was, therefore, the reaction to a homosexual tendency and differed somewhat from her attempts to make herself sick with drugs.

The profound depression from which the patient suffered was, of course, self-reproach for all the various misdeeds here recounted. The affect of reproach was more or less detached from the memories from which it really originated, and so manifested itself in consciousness as free depression.

To summarize the case: We have three different factors at work in the production of the patient's illness. 1. Masturbation, producing a true neurasthenia. 2. An anxiety neurosis, for the death of the patient's father cut off a source of sexual gratification and caused a retention of somatic sexual excitement. 3. A compulsion neurosis (10) resulting from a conflict between repression and the libido.

The headache, insomnia, acne, etc., are attributable to the masturbation neurasthenia. The factor of insufficient gratification produces a free anxiety which attaches itself to, and reinforces the compulsive fears due to conflict. The compulsive symptoms resulted as follows. After the death of her father she transferred her libido first to her employer, a man who resembled the father in that he was much older than herself, that he was married, and that he occupied a position of authority over her. Failing to find satisfaction from this source, she fixed upon her brother, who more or less corresponded to the sexual ideal determined by her parent, and she also returned unconsciously to the same types of gratification that had served her in infancy, thus awakening to activity the masochistic, the zoöphilic, and, possibly, the homosexual complexes. Naturally, these complexes were subject to strong repression, and could manifest themselves in consciousness in an indirect manner only. These indirect manifestations formed her compulsions and her dreams.

This patient came under my care early last summer, and the analysis was finished about the first of February, 1911. The treatment was interrupted during the summer, and again in the early winter, and there was less than three months of actual work spent upon the case. Some of the symptoms disappeared during the analysis, but others persisted until it was completed about the beginning of February. By the end of a week from the time the last explanation was given to the patient, she informed me that all her symptoms had disappeared and that she considered herself entirely well. She has remained well ever since. She was even able to stop masturbating, and has not so indulged herself since about the middle of February. The change in this patient has been remarkable. She is happy and cheerful, has lost all her oversensitiveness, her compulsions have disappeared absolutely, and her mind has ceased to dwell on erotic things. She tells me that the memory of her misdeeds no longer disturbs her, and that all these affairs are fading out of her mind like a bad dream. I feel this case worth reporting because it shows a favorable

result through analysis after sanitarium treatment, re-education, and hypnotic suggestion had failed.*

REFERENCES

1. Some writings in English on psychoanalysis are included in the *Journal of Nervous and Mental Disease Monograph Series*. Others are papers by Freud, Ferenczi, Jones, and Jung, in the *American Journal of Psychology*, April, 1910. See also Brill, *Freud's Conception of the Psychoneuroses*, *Medical Record*, Dec. 25, 1909, and Frink, *Dreams and Their Analysis in Reference to Psychotherapy*, *Medical Record*, May 27, 1911.
2. Freud. *Zur Psychopathologie des Alltagslebens*, 3d ed., 1910, S. Karger, Berlin.
3. Freud. *Die Traumdeutung*, 2d ed., Deuticke, Wien, 1910.
4. Brill. *The Anxiety Neuroses*, *JOURNAL OF ABNORMAL PSYCHOLOGY*, June-July, 1910.
5. Freud. *Die Traumdeutung*.
6. Brill. *A Fragment of the Analysis of a Compulsion Neurosis*, read before the New York Psychoanalytic Society, March 1, 1911.
7. Freud. *Beiträge zur Psychologie des Liebeslebens*, *Jahrbuch für psychoanalytische und psychopathologische Forschungen*, Heft. 2, 1910.
8. Freud. *Three Contributions to the Sexual Theory*, *Nervous and Mental Disease Monograph Series*.
9. Adler et al. *Über den Selbstmord, insbesondere den Schuler-Selbstmord*, J. F. Bergmann, Wiesbaden, 1911.
10. Stekel. *Nervöse Angstzustände und ihre Behandlung*, Urban & Schwarzenberg, Berlin, 1908.

*At the time of the proofreading of this article, five months after the completion of the analysis, the patient still appears to be entirely well. She has been at work, without interruption, for over four months.

SOME PSYCHOLOGICAL PHASES OF MEDICINE*

BY TRIGANT BURROW, M.D., PH.D.

THE subject I wish to bring before you to-night has to do with certain phases of psychology in their relation to medicine, but more especially with the principles of psychoanalysis, the science which represents the outcome of the psychological methods of research inaugurated by Sigmund Freud, of Vienna. As will appear, there are certain very grave difficulties inherent in the work of psychoanalysis,—difficulties which stand in the way of its immediate acceptance. Chief of these is its newness. Not its newness in the sense merely that it is a science of recent discovery, though it is new in this sense, too, but in that it embodies methods and principles which quite flout our ordinary scientific standards and traditions and are at variance with a whole mass of preconceived ideas which have grown with our growth and have become a part of our very being.

For psychoanalysis introduces us to a wholly new system of psychology, and to understand it there is required a complete change of attitude toward certain basic conceptions and a total reconstruction of many of our most elementary ideas.

This is true not only with regard to the conceptions entailed in the practical technique of psychoanalysis, but also with regard to the theoretical principles upon which the psychology of the individual is ultimately based. And it is the psychology of the individual in relation to his environment which is the proper business of psychoanalysis.

But as this study is concerned with complex psychological situations and reactions into which it is impossible to enter within the limited scope of this paper, it will perhaps be wise, instead of attempting an outline of the field

*Read at meeting of Medical and Chirurgical Faculty of Maryland, February 10, 1911.

in toto, and leaving you with a bare program, to confine the present treatment to the more essential principles involved.

The feature which above all others discriminates the interest of psychoanalysis is its exclusive restriction to the sphere of unconscious impressions; and by this is meant those impressions for which the individual has acquired a complete amnesia and which he is no longer capable of reproducing through voluntary effort,—impressions which exist in a realm functionally apart from the conscious life of the individual. Such impressions are often shown upon analysis to have their basis in the experiences of very early childhood, i.e., the period preceding the end of the fourth year — an epoch which Freud feels to be far the most significant in the determination of the later life.

That such buried and forgotten impressions are yet dynamic in the life of the individual, influencing his reactions and determining his apparent motives, and that such unconscious undercurrents may acquire the strength to dominate the entire personality, is amply attested by the researches made possible through the method of psychoanalysis. For it is to just such dormant, unconscious influences that the strange obsessions and imperatives, the phobias and depressions characteristic of so many abnormal psychic states, are directly traceable through the method of analysis.

In these early impressions we are afforded an explanation of the torturing doubts and apprehensions, the feelings of dread and inadequacy with which the neurotic mind is oppressed. Such too are the sources of hysteria, with its pantomime of somatic symptoms through which the unconscious fancies seek an outlet in symbolic substitutes; such are “the stuff that dreams are made of,” those disguised and baffling expressions of our unconscious imagery; and such finally are the subtle, unseen incentives of the hundred slips of tongue or pen, the treacheries of memory, and the idle tricks of action that beset the course of daily life and invest with purpose and significance the most trivial of events.

This deterministic attitude marks a startling innovation in the history of psychopathology. It is an instance *par excellence* of that newness of interpretation which, as I have

said, demands a complete recasting of certain of our most fundamental conceptions.

Hitherto we have been accustomed to regard many phenomena occurring within the psychic sphere as quite haphazard and inexplicable; occurring, as we say, quite by chance and without definite causal antecedents. But a psychic phenomenon may no more be the caprice of chance than a physical one, and just as science recognizes in the operation of physical phenomena a rigid principle of cause and effect, so in the sphere of mental reactions, in which as Adolf Meyer has long taught, we are but dealing with biology in its functional aspect, events are linked together within definite causal chains, representing an unbroken continuity of sequence.

The principle of psychic determinism is thus made a rigid criterion throughout the method of psychoanalysis. In the lexicon of analysis there is no such word as *accident*.

All this puts a totally different construction upon the symptoms of the various aberrant psychic states. They are no longer random and disarticulate, but should upon analysis lend themselves to definite, logical interpretation. Accordingly, hysterical manifestations, with their infinite variety of appearance, are no longer to be regarded as purposeless and without meaning, but must be viewed as an expression of certain unconscious trends which have failed of adequate appeasement.

Such neuroses, then, as are called functional, to indicate their psychic origin, possess a significant secret mutely expressing itself in symptoms which it is the task of psychoanalysis to interpret. However diverse such symptoms, be they neuralgias or phobias or anesthetics, they are in every instance to be referred to an analogous etiology.

However, the connection between the imputed cause and the symptom it occasions has usually only a *symbolic* significance, as is shown, for example, in cases in which vomiting ensues at the instance of a moral revulsion or in the resistances of pregnancy.

It may be convenient to conceive of the unconscious impression as acting in the manner of a foreign body which

having gained entrance into the organism is preserved there in unconscious association.

It is the affective residuum of an inadmissible experience — the ineffaceable vestige of some unaccredited event which, like a hidden ferment, disintegrates the medium of its growth. That this conception is no mere figment, but that an invasion of the psychic organism by a hostile impression actually occurs, is proven from the fact that each morbid symptom straightway disappears as soon as the memory of the specific cause is fully awakened and is reacted to in a manner appropriate to the original affect.

This sentence embodies the code of psychoanalysis. It contains the purpose and the vindication of the method, for analysis is after all nothing else than the therapeutic resource whereby the effete products of such sinister, psychical processes attain elimination through the normal organ of consciousness.

But what is the historical account of such psychic events as are thus relegated to the Lethe of the unconscious and may come to expression only in unconscious symptom-acts? How are we to explain the mechanism whereby certain impressions are deflected from the stream of current consciousness to reappear in spurious, collateral outlets?

According to Freud's theory this mental schism is the result of the inevitable conflict between the individual's instinctive, biological trends on the one hand and the artificial strictures imposed by the demands of our social and ethical culture upon the other. It is the uncompromising claim of the social polity versus the individual unit; and the struggle is an uneven one in which the individual is early coerced into submission and forced to sign away the inalienable rights of his being.

However, it is only under the conditions which Freud has termed the mechanism of repression, whereby the impressions belonging to the sphere of the individual's biological instincts and cravings are early thrust from consciousness that this capitulation is effected. But these cravings silenced are not actually eliminated, and the impulses which are denied fulfilment in frank instinctive activities discover for them-

selves a vicarious gratification in unconscious fancies which betray themselves in the familiar reactions of the neurotic.

There comes to mind the case of a lady whose chief symptoms consisted of an almost constant nausea with inability to retain food, violent convulsive movements of the abdomen and the loss of use of both legs, so that for a year she had been unable to walk at all without the aid of crutches. The clinical picture showed marked inanition and profound prostration.

The patient, who was unmarried, was a demure, parochial little woman, who had lived her fifty uneventful years amid the quiet surroundings of a small provincial village, where she had taught school during the week, given bible lessons on Sundays, and where at all times she had led a life of sacrifice and service.

In her girlhood she had been engaged to marry a man whom she deeply loved. One day word was brought her that he had shot and killed himself. In that moment the hope of her life was shattered. In her grief she pledged eternal fidelity to the memory of her lover, and consecrating herself to this ideal she renounced forever the fruition of her womanhood.

As time went on the patient observed about her the lives of her married sisters, happy and complete in the social integrity of their homes. But though, with the years, fresh interests and opportunities came to her, she only renewed her youthful vow and turned aside from them. Such a life as this is an instance of that extraneous and artificial repression of an elemental social instinct such as makes for the continuity of the race. How futile were the efforts to evade its behests may be gathered from an analysis of the patient's dreams. For in the unconscious vagaries of sleep there were subtly fulfilled in symbolic equivalents the frustrated undercurrents of her life. Here its broken fragments were pieced together in unconscious wish fulfillments.

In the discovery of these repressed, uncognized wishes unearthed through the analysis of her dreams, the patient's life appeared to her now in a new light, and the various symptoms vicariously expressive of these significant but frustrated trends began gradually to drop away one after another, until

at the end of two months the patient was restored to her former efficiency and was enabled to resume her previous place in life as a competent and zealous social worker.

The simpler instances of the discomfort experienced when for any reason an emotional stimulus may not be commensurately reacted to are universally recognized, as is exemplified in the common saying "to have a *good cry*." If reaction is forestalled the result is an emotional deadlock, so that an unrequited offense engenders feelings of vexation which may only be assuaged through the catharsis of an adequate retaliation. It is as if in obedience to the laws of dynamics any increase of the sum of psychic energy, as presented in an emotional stimulus, requires to be liberated in a voluntary motor or sensory discharge, and that where the normal outlet is blocked through undue inhibition and counterimpulses, the repressed energies force an outlet in *involuntary* and automatic reactions. It seems to me that some such mechanical analogy affords us a fair schematic representation of the essential mechanism underlying the psychoneuroses. The basic factor then in the production of these functional nervous disorders is the element of repression, with its resultant psychic dissociations.

Such a dissociated system of impressions has been called by Jung an unconscious complex, and with Freud he attributes all manifestations of neurotic disorders to the mental conflict arising from the presence of such hidden complexes.

Now it is obviously the task of a rational and scientific method of treatment to conciliate these autocratic complexes by admitting them into the presence of consciousness. It is only when the invidious psychic complex has been dissolved in the menstruum of conscious associations that it loses its strength and is rendered innocuous. But by what means may this be accomplished? How may we reach the source of infection? For since the malignant complex is of its very essence unconscious, it is obviously impossible that the patient himself throw any light upon the situation. His symptoms are as erratic and unintelligible to him as to the onlooker, for the solution lies in a sphere against which he himself has raised up an impassable barrier. To penetrate into this domain and render accessible to consciousness the

pathogenic complexes at the root of the disorder and so to introduce unity amid the discordant elements of the personality is precisely the task of psychoanalysis.

The method employed in the technique of psychoanalysis must vary with individual needs, to be determined only by the instinct of the physician. Because of the many modifications, therefore, to which the method is open, a comprehensive statement of its technique does not lend itself to exact formula.

However, of the technical resources at our disposal the most potent are two—the association test and dream analysis. The practical use of the association test for clinical and diagnostic purposes is due to Jung, of Zurich. As a ready-to-hand method of gaining insight into the present-day complexes, and obtaining a rapid, preliminary survey of the patient's general psychological trend, the association test is without equal, but when one seeks to delve deeper into the buried recesses of the unconscious and unearth the mouldy fossils belonging to the prehistoric age of infancy, with its remote experiences and its early conflicts, we must have recourse to the medium of dream-analysis. It is only through the portals of dreams that we may enter the crypts of the unconscious lately brought to light through the remarkable excavations of Freud's genius.

It is, of course, impossible to enter here into the psychology of dreams and into the elaborate mechanics of their construction. This is of itself a long and difficult chapter. Suffice it to say that the basic principle of dream analysis is the wish fulfillment. It is in the phantasies which the unconscious conjures during sleep that life's frustrated quests come into their right. Here are vented our suppressed satisfactions and unfulfilled yearnings.

One seeks in vain, however, to discover the unconscious wishes in the *manifest content* of the dream; it is only in the underlying, *latent content* that we need hope to divine its import. It is precisely in its artful, distorted forms of expression that we meet again the phenomenon of symbolization which constitutes, as has been said, the especial *metier* of unconscious mentation. For a fair appreciation of the significance of dreams one must go to Freud's great work,

“Die Traumdeutung,” which forms the keelson of the author’s contribution to psychology.

The study of dreams as interpreted by Freud, and of analogous activities of the unconscious, as represented in the symptoms of hysteria and related manifestations, convinces one of the dynamic and purposive character of these phenomena. It becomes more and more manifest that such phenomena are a compromise, symbolic expression of an inherent trend in the life of the individual which pertains invariably to the biological reactions comprised within the sphere of the social instincts.

Psychologically, hysteria is after all more a dilemma than a disease. It is not so much a static condition as a dynamic process, growing out of a fallacious point of view requiring correction. But so do habitual nosological prepossessions blur our vision that we tend to overlook the dynamic personal equation and to disparage the inherent social disharmony underlying the neuroses. Stated philosophically hysteria represents the revolt of man’s organic verity against the artificial vesture of society. *It is the protest of nature’s inherent truth against the mendacity of convention.*

Hence the essential component of the psychoneuroses is, in a broad biological sense, social, and the etiology of these conditions inevitably leads us to a latent disharmony in the sphere of the biological interreactions and relationships obtaining among the individual units of the larger social organism.

Therefore, in handling psychoneurotic disorders we deal with the individual as a social unit in relation to other social units, a relationship which, being based upon a community of hereditary instincts and reactions is in the truest sense psychological. The difficulty which calls for a corrective lies in some original idea or tendency which, lurking in the unconscious, acts as an unseen irritant to the psychic life, and the ancients, in their ignorance and superstition, were correct in their conception; the hysterical is possessed of a spirit which must be cast out, and to-day the demon of the unconscious is a specter which takes its place among the accepted data with which modern science has to reckon.

Undoubtedly there are also important *conscious* influences which act as upsetting factors of the psychic equilibrium — influences which are of themselves wholly adequate to account for the disturbance of function in very many types of psychic disorder. That this paper has not emphasized the etiological significance of such frankly conscious determinants will not, I hope, be construed as a repudiation of the causative validity of these factors. Such avowedly conscious influences have failed to receive proportionate acknowledgment here only because the present paper, being concerned with the principles of psychoanalysis as developed by Freud, is of logical necessity restricted to a consideration of those forgotten and repressed experiences which he has classed as unconscious.

One might say that in the drama of mental life as portrayed in the neurosis the conscious factors furnish the plot necessary to a chronological order and consistence, while the underlying unconscious influences are the hidden springs which supply the essential action.

There is need of wider recognition of these hidden springs at the source of neurotic disorders and of a more thorough study of the psychology of these processes. Psychotherapy has not lacked for adventitious aids, which undoubtedly have their place, but being merely adjuncts and irrelevant to the inherent situation, such agencies are necessarily restricted in their efficiency.

In the absence of an appreciation of the mechanisms involved in the morbid regressions presented in the neuroses, as interpreted by Freud and Jung, psychopathology is seriously hampered.

There is a psychology of nervous disorders and a knowledge of its principles is requisite for an adequate appreciation of their real significance and for determining the causative factors in the production of these processes.

ASYMBOLIA

BY ALFRED GORDON, M.D., PHILADELPHIA

(Patient presented at the October meeting of the Philadelphia Neurological Society.)

THE subject of separate faculties for the recognition of the form and of the nature of an object is still debatable. The observers are divided. Some hold that the loss of preservation of each of these functions is not an independent phenomenon, and that both are intimately associated with the impairment or integrity of deep or superficial sensibilities. Some authors, on the contrary, believe that astereognosis, viz., loss of the conception of form, also asymbolia, viz., loss of the conception of the nature of objects are individual functions, which are not dependent on the impairment of other forms of sensations. *A priori* it is difficult to admit that the perception of form and nature of an object is not the result of association of all individual senses. Logically we must concede that touch, pain, temperature, pressure, posture, muscular sense, movements, etc., all contribute to the idea of the shape and the nature of objects. Nevertheless, when we are confronted with clinical facts and we analyze them carefully, the interdependence of deep and superficial sensibilities is not always observable. We find that disturbance of the superficial may co-exist with the integrity of deep sensations, and vice versa; that the preservation of stereognostic perception may be present, together with the loss of symbolic perception, and vice versa. It has been recognized as quite correct by all writers that the elementary senses (touch, pain, temperature) are not at all indispensable for the formation of idea on the form and nature of objects. Particular emphasis is given to the relation of the latter to deep sensibilities, such as pressure, muscular sense, spacing, posture, muscular contraction. While certain observers consider that they all are necessary for the stereognostic

and symbolic perceptions, others attribute the most important rôle to but one or two of the deep sensations.

There are cases in the literature in which astereognosis or asymbolia existed, together with loss or impairment of several or all deep sensations, but to conclude that the latter are in a causal relationship with the former, is perhaps unwarranted. It would be perfectly permissible to draw a positive conclusion, if cases have been observed in which the disappearance of the deep sensibilities were followed by disappearance of asymbolia and astereognosis. Such cases in reality exist in the literature and undoubtedly these facts contributed considerable to the persistent belief of some that the symbolic and stereognostic phenomena depend invariably upon the deep sensibilities.

On the other hand, we cannot ignore those cases in which astereognosis existed without asymbolia, and vice versa, also that either of these two phenomena or both, accompanied disturbances in deep sensations, and in spite of the persistence of the latter, the former eventually disappeared. In Raymond and Egger's case, for example (*Revue Neurologique*, 1906, p. 371), the superficial sensibility was intact, but deep sensibility was slightly involved; the stereognostic perception was intact, but asymbolia was complete. The patient was able, therefore, to recognize the form, but unable to name objects. Two years later the above sensory disturbances were still present, but asymbolia disappeared completely. Rose and Egger (*Semaine Medicale*, 1908, p. 517) reported a case in which all forms of sensations, deep and superficial, as well as stereognosis, were perfectly well preserved, but asymbolia was complete.

In *Revue Neurologique*, No. 18, 1910, I reported in detail two cases, in which the integrity of the stereognostic sense was preserved in spite of pronounced alterations in other forms of sensibility. The cases also show that the symbolic perception does not always depend upon the ability to recognize the form of an object, and therefore they lead to the conclusion that stereognosis and symbolia are two separate cerebral phenomena. Presently I wish to put on record a case demonstrating in its purest form the absolute independence of the symbolic faculty.

A young girl of twelve with apparently good previous health, was seized at the age of eight with a convulsive seizure while in bed. There was complete loss of consciousness, with frothing at the mouth and pallor of the face; tonic and clonic spasms were observed on the left side of the face and left arm. Since then she gradually developed a weakness in the left hand and a tremor upon voluntary movements in the left arm.

She came under my observation three and one half years later and the following condition was found. The left upper extremity is smaller than the right. The difference in size was particularly noticeable on the hand and on each individual finger. The latter were unusually small, considering the patient's age. There was a manifest arrest of growth in the skeleton of the left upper extremity. While the grip of the left hand was decidedly poorer than that of the right hand, nevertheless the patient was able to do some work with the left hand. The lower extremities were equal in size, but the patient could not stand on the left foot as well as on the right. The left patellar tendon reflex was somewhat exaggerated when compared with the right. The most conspicuous motor phenomenon was the ataxia of the left hand. The patient's parents relate that she is quite awkward with her left hand; she cannot carry an object from one place to another. In fact, the test showed that when she was told to carry her hand to the mouth, nose, ear, a very inco-ordinate movement of the hand was observed. She was unable to drink and to feed herself with her left hand. The power of each segment of the left upper extremity and of each individual finger was fairly well preserved.

The most interesting phenomena were brought out when an examination for sensations of the left hand was undertaken. The sense of touch, pain, and temperature was well preserved on the entire hand, dorsum, and palm, also on both surfaces of each individual finger. The tactile sense was investigated with Von Frey's method,—a camel's hair and absorbent cotton were used. Pain sense was tested with my precision esthesiometer (*Journal American Medical Association*, April 17, 1909), and was found to be normal.

Extreme heat and cold were used for temperature sense; no deviation from normal was detected.

The deep sensibility was tested for pressure, localization, spacing, and movements. Pressure sense was tested by placing different weights or by exerting direct pressure with my finger. When the latter method was employed, great care was taken to produce precisely the same degree of compression. No abnormality was detected over the entire hand and each finger.

Localization test was determined by the naming, looking, and spacing procedure. The naming test consists of having the patient tell the spot touched while her eyes are closed. The looking procedure (Volkmann's) consists of pointing out the touched spot by the patient after her eyes have been closed, during the touching and after the impress made on the skin has disappeared. The spacing test consists of touching with two points of the compass or with one point after another. The naming and looking tests were found to be positive all over the hand, but the spacing perception was irregular on the tip of the index, viz., sometimes she would answer correctly and sometimes incorrectly, although an error occurred only very occasionally. The spacing was perfectly perceived over the other fingers, and over the entire index, except the above-mentioned extreme end of it.

The test for movements of the fingers was positive. The patient's eyes being closed, extension, flexion, rotation, abduction, adduction were performed, all movements were perfectly recognized.

I then proceeded to the examination for form (*stereognosis*) of objects, their consistence, also the material of which they were made. The following objects were placed in her hand: key, inkstand lid, safety pin, small bottle, eraser, steel pen, button, silver half dollar, and a number of other small objects. The form, angularity, consistence, material of which they were made, were all recognized correctly and promptly. But when the nature of those objects (*symbolia*) was tested, grave errors were committed by the patient and she was absolutely unable to name any one of them correctly. She was told to place them between the thumb

and forefinger or to feel them with all her fingers, roll them in the palm with the thumb and other fingers; at no time could she recognize them, even after an interval of two or three minutes. Asymbolia was therefore complete.

The patient was kept under observation for a period of four months and during that period attempts were made to re-educate her for the loss of the symbolic perception. Slight improvement was obtained in regard to a few objects. At first three objects were selected, and the patient was told at each seance to look at them; their shape, appearance, angularity, length, and width were all pointed out to her. Then when her eyes were closed, one after another were placed in her hand. The training lasted each time ten or fifteen minutes and repeated twice a week. As the number of objects selected at first was very small, she succeeded in recognizing them, but as gradually others were added the difficulty increased. When for some reason she would miss two or three séances in succession, the difficulty was still greater. The result of four months' training was indeed very meager. At the time she was presented before the Philadelphia Neurological Society, the only object she was able to recognize among those in which she was trained was silver coins, but she was unable to tell the value of the coins placed in her hand. All other objects tested at that meeting were not recognized by her, but she could give an account of their form, consistence, character of the surface.

In the two first cases described by me (in *Revue Neurol. loc. cit.*) there were some disturbances in the deep sensations. Thus in the first case perception of movements and localization sense were slightly altered, the spacing sense was particularly affected. In the second case the pressure sense was somewhat changed; localization by means of naming and the spacing test were deficient; spacing was, like in the first case, much affected. But in both cases the stereognostic sense was absolutely intact. Asymbolia was present in both cases. They therefore prove the independence of the stereognostic and symbolic perceptions as far as the influence of one upon another is concerned. They do not illustrate, however, the independence of symbolic perception in relation to deep sensations, as in both

cases the latter were somewhat affected. On the other hand, the cases by Raymond and Egger, also by Rose and Egger (*loc. cit.*) show conclusively that asymbolia may be present and disappear without being influenced by other sensations, including stereognosis. The case reported by me presently illustrated in the most conspicuous manner the total independence of the symbolic perception from any other form of sensations. It is true, such clear cut cases are not very frequently met with, but nevertheless they exist and the scepticism concerning the existence of a special faculty in recognizing the nature of objects independently of their shape and form or other sensations can no more be maintained. Symbolia is a separate function of the highest order, depending on complex associative processes in which the well-known sensibilities play probably but a minor rôle.

It is interesting to recall that Raymond and Egger, *a propos* of their case mentioned above (*loc. cit.*), introduced a new term and designated the symbolic deficiency by "Tactile Aphasia." In this conception of the sensory disorder they find an analogy with "word deafness." A word-deaf individual hears all variations of the voice, but the acoustic impression fails to bring before him the auditory image of the spoken word. The spoken word is a complex group of sound vibrations on the same order as a palpated object is a complex group of superficial and deep sensations. A word-deaf hears and understands melodies, but spoken language is to him an acoustic perception without a meaning. To an individual affected with tactile aphasia a palpated object possesses all physical properties, but without a meaning. In both cases the mutual association of the sensory elements is preserved, but the association with the language zone is abolished. Aphasia, therefore, is common to both, and consequently the term, "tactile aphasia" can be used with the same propriety as acoustic aphasia in word-deafness. Dejerine (*Revue Neurol.*, 1906, p. 597) contests the use of the term, "tactile aphasia." According to him an aphasic, motor or sensory, has preserved the conception of images of objects, but lost the idea of the words necessary for naming them; he knows their use and their physical properties, and does not confound one

with another. On the contrary, those who suffer from the so-called "tactile aphasia" of Raymond and Egger are unable to recognize the nature of the object; they know its form and dimensions, but cannot name it, because they do not know its nature. Dejerine proposes the term "tactile agnosia" to designate the inability of appreciating the nature of an object placed in the affected hand.

ABSTRACTS

STUDIES OF SUGGESTIBILITY IN NORMAL PEOPLE. *Hallucinations visuelles a l'etat normal*, par Ernest Naville. *Archives de Psychologie*, No. 29, Oct., 1908. *Recherches Experimentales sur la Suggestibilite*, par Guido Guidi. *Idem*.

Contribution a l'Etude de la Suggestibilite a l'Etat de Veille, par Emile Yung. *Archives de Psychologie*, No. 31, Avril, 1909.

IN the first article Naville gives an account of some personal experiences with visual hallucinations. He is a man of ninety-one years of age, with no organic disturbances of sight, although he finds it difficult at times to read and write.

The hallucinations always occurred in the summer, when he was at his chalet, which was at an altitude of 1212 meters. In his house were two windows, one giving a view of Mt. Blanc, the other looking toward Geneva. Often when looking from these windows he saw groups of people coming up the path, but these always disappeared before they arrived at the house.

A number of small white stones, which can be seen from the window, were seen to transform themselves into sheep. This was an illusion, but further up the mountain where there were no rocks he still saw the sheep. This was an hallucination.

Although he frequently saw men, women, animals, and dust, there was never any noise or conversation. The visions all occurred in a period of six weeks, while he was on the mountain and disappeared as soon as he descended to home at a lower level. They had no especial time of appearance and the weather did not affect them.

The author thinks that every psychical phenomenon has a corresponding physiological phenomenon, and suggests that as a man with an amputated arm often feels pain because his cerebral state responds to what is ordinarily the result of a real excitation of the peripheral nerves so a determined cerebral condition may cause the phenomena of illusions and hallucinations.

In the second article Guidi gives the results of some experiments to determine the suggestibility of young and older female subjects from a common school. In his first experiment he used a box into which the finger of the subject was protruded a certain distance, shown by a sliding scale. The box was made to represent a store, and to give the impression of heat a spirit lamp was placed in front of it.

The subjects were the children of workmen from one of the poorer districts of Rome. He finds that the youngest are the most suggestible, and that the curve diminishes gradually up to the fifth class. The instructors are shown to be slightly more suggestible than the fifth class, which consisted of children from ten to fifteen years of age.

According to ages the curve sinks from the sixth to the seventh year, rises to the ninth, then sinks to the thirteenth, and again rises to the fifteenth. He also finds that the subjects who feel heat after pressing the finger 2 cm. into the box are more quickly influenced than those who feel it only after pushing the button in as far as it will go.

The method seems to permit a true measure of the suggestibility of different subjects, and may also serve to prevent errors in the determination of threshold stimuli.

In the third article Yung gives the results of experiments upon normal subjects, students in science and medicine.

The first experiments were made with students who were learning to use the microscope. On one occasion a student given a slide supposed to contain diatoms drew a picture which did not at all resemble one. When told to pay more attention to his work he drew another which was as incorrect. On examination it was found that the cover glass had been broken and the diatoms had all been lost, and it showed that the student had been the victim of a visual hallucination, provoked by the verbal description of a test object.

Following this, each year the author gave out a number of false preparations and received drawings of diatoms and infusoria which were entirely imaginary, since they did not correspond to any exterior reality. Of eighty students thus tried sixty-three absolutely resisted suggestion, and after examining the specimen declared they saw nothing. Six others, after first declaring they saw nothing, admitted they saw some sort of an image, but it was too indistinct to be drawn. Eleven made purely imaginary drawings. Of these seven were males and four females.

In a class of twelve girls, aged from sixteen to seventeen years, four saw objects which did not exist on the slides. Later, in a class of German girls the same age as the preceding, similar results were obtained. The results obtained by testing advanced students by the same method were always negative, but their eyes are capable of committing grave errors, and they often see in real preparations details of structure which do not exist.

Another experiment was performed by the use of cards arranged in the form of a human face, each card corresponding to

some part, eyes, nose, etc. The conversation is led to a discussion of the existence of a magnetic fluid and the operator tells some experiences which seem to demonstrate the possibility of certain sensory phenomena which are difficult to explain without this hypothesis. The operator then offers to tell which card some chosen person has touched, and to prove his sincerity leaves the room while the card is being touched. On his return he fumbles the cards, and his confederate by touching the part of his face corresponding to the card is able to tell him which card has been touched. Naturally the company is astonished when he succeeds. After this it is easy to get others to try to tell which card has been touched and a certain number will say they have some peculiar sensation when they touch certain cards. The author has practised this experiment for thirty years, and usually on women, because they offered themselves more often than did the men. The total number tested was 420, of which 68 resisted every suggestion, and 352 or 83.8% responded to suggestion.

The results in tabular form are:

		MALE		FEMALE		TOTAL
		Total	100	Total	320	420
		No.	%	No.	%	%
Suggestible	{ Over 20 years	49	54	259	91	73
	{ Under 20 years	9	100	35	100	100
	{ Total	58	58	294	92	83.8
Non-suggestible. Over 20 years		42	42	26	8	16.2

The hallucinations provoked by the suggestion are divided into five groups, — muscular, tactile, olfactory, visual, and auditory.

The muscular hallucinations were experienced by 315 persons and consisted in shooks, attractions, or repulsions in the muscles of the fingers, hand, or arm, which was passed over the cards.

The tactile hallucinations comprise also thermic sensations. The subjects say they recognize the card by a sensation of heat, cold, or roughness.

The olfactory hallucinations are obtained by the operator, after a speech in which he says that although normally the human sense of smell is faint it may acquire great acuity when one is attentive to the odors about. Positive results were obtained in 158 cases.

The visual hallucinations consisted usually in movement. The card seemed to move slightly. The suggestion that the card changed color or form was not accepted by any one.

Five subjects picked out cards by means of the auditory sense, saying they heard some indefinite sound.

In the third set of experiments coins were used, and the operator claimed to be able to pick out the one held in some person's hand by an odor he perceives. Really, he picks out the coin from among others because it is warmer. Of 120 persons so tested, 69 per cent have perceived some odor on the piece of money and on the person who held it.

These experiments show that a subject may be suggestible in the waking state as well as in the hypnotic sleep. Every one is suggestible to a certain degree. Children are more suggestible than adults and in a general way women are more suggestible than men. The "action personelle," of which Binet speaks, plays an important role, and the operator gains success by experience.

CHARLES RICKSHER.

THE DEFINITION OF HYSTERIA. *By Ed. Claparede.* Archives de Psychologie. No. 26, tome vii.

CLAPAREDE believes that in the attempt to arrive at a definition of hysteria a great deal of confusion has arisen from the fact that different investigators have based their opinions on varying foundations. Some argue from an empirical or descriptive standpoint, while others follow physiological and psychological methods. Some hold as the basis of classification those particular features of hysteria which happen to interest them or impress them most forcibly; while with others the special therapeutic methods which they have adopted furnish varying conceptions of the malady. Thus the Salpêtrière school makes hysterical phenomena conform to somnambulistic states; Dubois considers the malady due to errors in judgment; the followers of Bernheim and Dejerine accept auto-suggestion as a cause; while in a like manner, Babinski, Sollier, and Freud have each involved their own theories according to their ideas.

The two questions brought forward at Lausanne, viz., the definition and the nature of hysteria, are better kept separate; for as Claude has shown, we must understand the elements of a disease sufficiently to characterize it before we can give it a definition.

Although Babinski has expressed himself as believing that we must first define the condition to be studied in order to determine the limitations of the group considered, Claparede maintains that we recognize, in general, the existence of the group of functional disorders which we call hysteria, and that a study of the nature of the disease is possible before forming an exact definition.

The position maintained by Babinski, that hysteria is that condition which may be produced by suggestion and removed by persuasion, is the result of his having given much of his attention to the differential diagnosis between functional and organic disease. While this definition may apply to the particular cases he has studied it fails to explain a great many others, nor does it throw any light on the real mechanism and nature of the disease; what the suggestion is, how it acts, or why suggestibility is exaggerated in certain individuals. Moreover, Claparède says, this increased suggestibility may not be the cause of the disease, but one of its symptoms.

Aside from the inadequacy of suggestion as a cause of hysteria there is great difficulty in accepting auto-suggestion as playing an all important role, for the difficulty is not alone one of accepting but of forming in one's own mind a manifestly unreasonable idea to be accepted. One could scarcely conceive of auto-suggestion causing an astasia abasia as a result of fear, or paroxysms of dyspnea as a result of emotional shock. Even symbolism or the "conversion" of Freud will not admit the role of auto-suggestion.

Claparède believes that much is to be learned of hysteria by regarding its symptoms as having biological significance. Thus in using the Freud method of psychoanalysis one finds a certain resistance to the attempt to bring to light certain memories of painful events. Biologically this may be explained on the grounds of the organism guarding itself from painful recollections by repression. It is a reaction of self-defense. This same inhibitive reaction directed against memories, acts, or certain parts of the body may produce amnesia, paralysis, or anæsthesia. Total inhibition may give rise to syncope attacks which may be regarded as analogous to the "simulation of death" so widespread among animals. In a like manner the globus hystericus, œsophageal spasm, and vomiting may be considered as defense reactions; the refusal to assimilate.

This same reaction of self defense, as developed in various animals in the progress of evolution, is capable of accounting for many of the trophic cutaneous lesions hitherto so difficult to explain. The integument of lower animals presents a great variety of modifications to serve the purpose of protection against temperature, injury, attack, etc., hence the development of sweat glands, fur, feathers, pigment cells, and secretory changes.

Perhaps the hysterical cutaneous lesions are the result of abortive and incomplete attempts to revert to various of these pre-existing states. "Do we not still possess goose flesh," says Claparède, "as one of the manifestations of fright, as well as pallor?"

These are also cutaneous phenomena which would seem not less strange to us than the bullæ of hysterical persons if they were as rare."

The occurrence of these defense reactions depends on a tendency to revert to atavistic principles on the part of the individual. And it is well known that hysteria occurs more in women than in men, particularly in those with more or less infantile characteristics, these being tendencies which lend themselves to reversion to past types of reactions.

Recognizing the rôle played by inhibition in the production of hysteria by cutting off groups of images, sensations, and memories, Claparède proceeds to classify the types of disturbances resulting, and illustrates by a diagram showing how the different varieties are related to one another in forming a general structure. This he offers only in a tentative way with no intention of defending it as being comprehensive of the nature of hysteria.

The conclusion is: To attempt to define hysteria before having revealed its nature is a useless, dangerous enterprise; useless, for what end does it serve, except that a morbid manifestation bears a certain characteristic, if this characteristic gives no indication of the nature of the manifestation it accompanies? Dangerous, for, aside from the fact that a premature definition inevitably leads to a begging of the question, it is an obstacle to the progress of investigation, preventing impartial observation of the phenomena, and making the complexity.

G. A. WATERMAN.

TRAUMATIC NEUROSIS AND BABINSKI'S CONCEPTION OF HYSTERIA. By *Tom A. Williams*, Communication to Second International Congress for Industrial Accidents at Rome, 1909. *Medical Record*, October 2.

In this communication Williams replies to certain objections called forth by his signed editorial in *Monthly Cyclopaedia*, November, 1908, Recent Advances in Hysteria in Connection with Traumatic Neurosis. He shows that horror, fear, and pain need not necessarily suggest any after-idea of disability, and that they cannot replace this. He concludes that for the implantation of the fixed idea at the root of traumatic neurosis, suggestion is indispensable, is usually primitive, and need be neither subsequent to the accident, nor verbal, nor accompanied by emotion.

He quotes Bevan's twenty-four cases of "Spinal Commotion," occurring among the two hundred and sixty-five passengers in a single railway accident.

He demands the evidence that exhortation can affect pathological exudates, or even functional derangements of the Betz cells. He quotes the gastric neuroses as examples which are cured by the removal of false fixed ideas, usually produced by unskilful suggestions by medical men. There is no trauma in the induction of these of which the pathogenesis is the same as that of traumatic neurosis. Both are induced by suggestion and removed by suggestion-persuasion, and are therefore hysterical. The originating suggestions are imbibed from the patient's surroundings.

The main effect of the indemnity, where malingering is not in question, is rather on the *amour propre* than on the pocket. A personal case illustrating this point is fully described; and the author analyzes the reasons for the success of its treatment. There follows a discussion upon the diagnosis of suggestibility. This must not be by exclusion, but by positive signs, which, however, are not yet susceptible of measurement. He concludes with an appeal for a replacement of psychological mystification by diagnostic positiveness, in order that our profession may no longer suffer the reproach of incompetence in the face of certain so-called functional nervous disorders.

AUTHOR'S ABSTRACT.

CONTRIBUTION TO THE PSYCHOLOGICAL DIFFERENTIAL DIAGNOSIS OF THE INDIVIDUAL TYPES OF EPILEPSY. (*Zur psychologischen Differentialdiagnose der einzelnen Epilepsieformen.*) By Rittershaus. *Arch. für Psychiatrie u. Nervenkrankheiten*. Band xlvi, Heft 1, S. 1, and Heft. 2, S. 464.

THE question of the subdivision of epilepsy is becoming more and more urgent, for it is generally recognized that under this term are grouped various conditions perhaps of a quite different nature. The temptation to hope that the establishment of individual types may be effected by closer psychological analysis is naturally a great one, and Rittershaus has here furnished an interesting and valuable contribution to the subject. His paper is a hundred and seventy-five pages long (where could such work be published in America?), so that one can here mention only a few of the main conclusions reached.

The starting point of his investigation was Jung's fundamental work on the association-reaction characteristics of chronic epilepsy, and the problems he set himself were, first, to submit Jung's conclusions to the test of further experience, and secondly, to determine whether they held good over the whole field of

epilepsy, organic, Jacksonian, essential, etc., or, if not, what differences existed in the association-reactions of different forms of epilepsy. The most important conclusion of the whole work is that by this means no such differences could be established, and that, for a number of reasons which the author fully discusses, the evidence points to the truth of the Marie-Freud hypothesis, namely, that encephalitic infections in early life play an important part in the causation of genuine epilepsy. At the close of the paper the following summary is given:

1. I have been able throughout and fully to confirm Jung's findings on the associations of epileptics. For reasons several times gone into, I have not investigated the question of the action of complexes. As additions to Jung's work I should like to lay special stress on the specific circumlocution, the difficulty in finding words, and the speech deviations (*Entgleisungen*), particularly in the attachment to one mode of expression.

2. A differential-diagnostic distinction between the so-called genuine epilepsy and that occurring after infantile cerebral palsies is apparently not to be demonstrated by means of the associations.

3. The impossibility of distinguishing genuine epilepsy from the encephalitic by psychological investigations naturally in itself proves nothing for the identity of the two maladies. The kind of speech deviations, which make a direct impression of a paraphasia, together with other observations, such as the aphasic disturbances of epilepsy in general, the unilateral phenomena in so-called genuine epilepsy, the microscopical investigations, and so on, permit however, the very probable conclusion that both these maladies are identical in the sense of Marie, Freud, and others.

4. Other clinical pictures initiated by epileptiform convulsions may by means of the association-reactions be separated from epilepsy proper with fair certainty.

5. Also in cases of psychical epilepsy the diagnosis may frequently be confirmed by means of the associations, though it is still uncertain whether it is possible to recognize in this way all the cases, even the slightest.

6. The epileptic type of reaction could frequently be made still more evident by the use of alcohol; a negative result of such an experiment is, of course, as with every alcohol experiment, not demonstrative.

ERNEST JONES.

MIRACLES OF HEALING. By Charles W. Waddle. *Amer. Journal of Psychology*, 1909, xx, pp. 219-268.

THIS is a study of what the author calls the "miracle psychosis," which "is the result of the mind's reaction to a phenomenal world which constantly baffles satisfactory explanation." "All who have studied the medical lore of primitive and ancient civilizations agree that 'primitive man regards everything as possessed of magic power allied with what we call life, capable of action for good or evil' [Fewkes]." Now "to the mind of primitive man the idea of disease and death from natural causes is almost unknown"; so that death rather than life was mysterious, and mysterious too, the means, however efficient, for evading death.

The author gives an interesting survey of the various means for curing and preventing disease, that have been popular in different ages — demonology, witchcraft, magic (amulets, charms, rites, etc.), plant remedies (semi-scientific, but still also pandering "to the popular craving for the supernatural"), medicine men, the king's touch, divine healing, etc. (this order pretends to no chronological merit). More or less allied with these palliatives for the human lot were various customs and institutions having the more constructive aim of ensuring happiness, success, etc.,— prophetic and other lore of the ancient Hebrews, oracles, prayer (as more or less employed at present), etc. From the various practices related one gathers as to the "miracle psychosis," that it essentially is a state of mind in which the attention is unreflectively turned to some process in which the *logical* connection of cause and effect is neither known nor sought after. The other elements, such as dread of evil or desire for health and prosperity, are ordinary states of emotion and volition which are concomitants, but not essentials of the "miracle psychosis." Thus it should seem difficult to distinguish this state logically from that of the present-day physician, who makes routine use of several "empirical" remedies (in the popular sense of the term) from the pharmacopœia. The experimental scientist is less given to the "miracle psychosis," but he is by no means wholly emancipated from it. This, at least, if we are to speak quite exactly. And certainly the teacher in a town fifteen miles from Boston who in 1892 "advised the pupils to wear nutmegs about the neck to prevent cold-sores," and the working woman who plies her stomach with the patent "golden remedies" believes as practically in miracles as the pilgrim to the Church of Ste. Anne de Beaupre, or the ancient Greek consulting the entrails of a sheep.

In his own conclusions the author somewhat turns from the strict psychology of the "miracle psychosis." "Almost all miracle workers and believers in miracles have attached religious significance to the wonders [!] they have been able to perform because, being unable to explain the phenomena, they have attributed them to the activity of such supernatural agencies as they believed to exist. . . . It is now certain that those cures which have always seemed miraculous are the cures effected in large measure by the influence of the mind on the body." And the following may be not without interest: "There can be little doubt that the failure of the rank and file of the medical profession to live fully up to their opportunities in the field of psychotherapeutics is in part accountable for the rise and spread of a type of healing cult, which reflects little credit upon the intelligence of our people, but which has been a natural result of a new evaluation of the mental element in man brought about largely by the popularization of psychological thought. The church has been equally negligent of her duty as a moral and spiritual force working in harmony and in co-operation with the physician for all-round health." The article concludes with a bibliography of ninety-one references.

HOLT.

THE PART PLAYED BY THE EMOTIONS IN THE GENESIS OF NEUROPATHIC AND PSYCHOPATHIC DISORDERS (DU RÔLE DE L'EMOTION DANS LA GENESE DES ACCIDENTS NEUROPATHIQUES ET PSYCHOPATHIQUES). *A Symposium. By P. Janet, L. Halican, H. Claude, E. Dupre. Revue Neurologique. Dec. 30, 1909.*

THIS extended symposium and discussion on the emotions, which took place at a recent combined meeting of the neurological and psychiatric societies of Paris, is a most timely one, because of the important part played by the emotions in the genesis of certain psychoneuroses, as has been pointed out by recent psychopathological investigations and experiments. We refer particularly to the importance of the emotions as modifying the electrical resistance of the body (psychogalvanic reaction) or as temporarily inhibiting the vagus and thus producing an increase in the activity of the automatic muscular mechanism of the heart (psycho cardiac reflex), or finally in causing a mental retardation in the association tests. The necessity for an exact limitation of the term emotion was also insisted upon in this symposium. The entire subject was discussed from four different aspects, namely, the psychological, physiological, neurological, and psy-

chiatrical. To each presentation a number of important questions were attached and these questions formed the basis of the subsequent discussion.

Janet opened the symposium by a paper on the psychological problems of the emotions. He pointed out the necessity for an exact definition of emotion and emotional reaction. Sometimes the reaction of an individual to his environment is predetermined by his constitutional make-up, his heredity or his education, on other occasions the individual is compelled to suddenly adapt himself to new situations. If circumstances should be such, that the individual becomes incapable of accomplishing this latter, there arises a useless reaction, a biological maladjustment, in all the functions of the organism. It is this complex disorder which is designated as an emotion. Of course, the weak point in this conception is the insistence that an emotion is always a useless reaction, whereas certain biological observations have proven the contrary. For instance, it was pointed out by Darwin, in his observations upon the emotions of animals, that certain emotional reactions, which superficially appear useless and inopportune, are, when closely analyzed, found to be practical reactions of defence. The emotional symptoms are divided into several groups — such as visceral and motor disorders. The various theories of the emotions were next discussed, such as the theories of feeling, the intellectual theories, the visceral theories (James, Lange), the instinctive theories, which state that the emotions are mere resurrections of acts executed by our ancestors or by animals (Hall, Dewey, Irons), and finally Janet's dynamic theory, in which it is claimed that an emotion is a depression or lowering of the psychological tension and therefore there results an insufficiency of adaptation.

The physiological aspect of the problem was handled by L. Hallican. Here there was taken up a general discussion of the emotions, with particular reference to such questions as to whether or not the circulatory disturbances of emotional origin can cause nervous disorders and whether the emotions can be controlled by the will. In a discussion of this sort, physiology, by the very nature of the subject, becomes almost inseparable from psychology.

The neurological problems were discussed by Henri Claude. He concluded that the emotions can cause certain nervous disorders, but only if the subject was of an emotionally unstable make-up. In his presentation of the psychiatric problem, E. Dupre concluded that the emotions may cause all varieties of phobias, impulsions, maniacal, and depressive states, etc. In the extended discussion on these four papers the problems were taken

up systematically and at great length. Within the limits of an abstract, it is impossible to do more than to mention a few of the most salient points. It was shown, for instance, that hysterical symptoms were not artificially created, but were caused by a series of emotional experiences. It was also shown that all neurasthenic states were the result of emotions and not of vague, hypothetical exhaustion of the nervous system. This is certainly a healthy reaction from the misconceived opinions on neurasthenia, which so largely load our text-books. The whole discussion, which occupies more than a hundred pages of fine print, will well repay reading.

I. H. CORIAT.

REVIEWS

TITCHENER'S PSYCHOLOGY. A Text-book of Psychology. *By Edward Bradford Titchener.* New York. The Macmillan Company. 1910. pp. xx+565.

PROFESSOR TITCHENER has given to the psychologist a text-book which is characterized by its thoroughness, consistency, and clearness, by an excellent selection of material, and by a strict adherence to scientific principles. It is as free from superfluities and yet as unflinching in giving all the premises from which the conclusions are drawn as are the best books of physics. The definitions are concise and the concepts are carried without change to the end of the book. Wherever there is the slightest danger of ambiguity, reference is made to the definition adopted.

The author has freed his psychology from discussions of logical or philosophical questions. There is also only sufficient physiology to make clear his theories. A knowledge of sense physiology should be as much presupposed in a text-book of psychology as a knowledge of mathematics is in a treatise on optics.

The text-book is based upon experimental data. The court of last appeal is the laboratory, where controlled introspection by trained observers is gradually revealing more and more of the structure of mind. The author, however, does not lose himself in a wilderness of facts. Neither does he remain in the clouds of speculation, but, thorough scientist that he is, he takes a middle course, as he himself explains in the last chapter, which seeks to control theory by systematized experimental data.

The book begins with a section upon the "Subject-Matter, Method, and Problem of Psychology." Sensation, affection, attention, perception, memory, and imagination, action, emotion, and thought are treated in the order given.

As regards the relation of mind to body the author adopts psycho-physical parallelism. Mind and body are "simply two aspects of the same world of experience." As, however, the parallelism is "constant and invariable," the underlying physiological processes are referred to in the manner they would be if they were the cause of the mental phenomena. Mind is defined as "the sum-total of mental processes occurring in the lifetime of an individual," and consciousness as "the sum-total of mental processes occurring *now*, at any given 'present' time." Consciousness

may or may not accompany neural processes. If it does not, then we have a gap in the mental side of the world phenomena, for there is no subconscious. There is no necessity to posit a third something between consciousness and neural processes since everything which goes on below the conscious level can be interpreted in terms of neural processes. The "constant and inviolable" parallelism is, therefore, not a complete parallelism. Where ever there is mind there is corresponding physiological processes, but not vice versa. The mind, then, is indeed scrappy as compared to the physiological processes. Continuity, however, does not need to appear in a realm where cause and effect play no part.

Beginning with sensation we find that its attributes are quality, intensity, clearness, and duration. The different senses are interestingly described, and the question of the measurement of the intensity of sensation discussed.

The sections on feeling and on attention follow closely the author's *Psychology of Feeling and Attention*. There is still little known about affections. The author, however, believes there is an elementary affective process co-ordinate with sensation and that its qualities are pleasantness and unpleasantness. Affection differs from sensation in that it lacks the quality of clearness and that its two qualities cannot be in consciousness at the same time.

In no section, perhaps, is the difference between a structural psychology as developed by introspection and a functional psychology more marked than in the section on attention. In order to define attention it is necessary to observe what occurs in consciousness under different degrees of attention. It will be seen that those sensations and images which are directly attended to reach a maximum of clearness. For the author there are two levels of attention, a fovea of clearness and an obscure margin. What is generally called involuntary attention is named primary attention. During primary attention there is no strain, no shift, the margin becomes negligible. In voluntary or secondary attention the margin gains in influence, the attention broadens, and what was marginal may for longer or shorter intervals become foveal.

The section on perception begins with spatial perception. All but hearing and smell the author believes to have the spatial attribute. There is, however, much investigation still to be done in this field. The third dimension is discussed for tactual and visual space. In the tactual space this perception is due to analogy from the other two dimensions. In visual perception the dis-

parity of the retinal images produces the third dimension perception.

The chapter upon the psychology of perception begins with a definition of pure and mixed perceptions. The former implies the "grouping of sensations under the laws of attention"; the latter differs from it in that it includes both sensations and images. As the chief points of the theory of apperception are included in the above definition, the author sees no reason for continuing the use of the word "apperception." Perceptions also differ from sensations in that they have meaning. "Meaning, psychologically, is always context, . . . and context . . . is simply the mental process which accrues to the given process through the situation in which the organism finds itself. Originally meaning is kinæsthesia; the organism faces the situation by some bodily attitude, and the characteristic sensations which the attitude arouses give meaning to the process which stands at the conscious focus. . . . For ourselves . . . meaning can be carried in imaginal terms." Kinæsthesia and verbal images are of the most importance for meaning. Further, meaning need not be conscious. It may be represented solely by a cortical set.

In the old atomistic psychology of association ideas already had meaning and were consequently stable and permanent. Now the author has defined an idea as differing from a perception only by the fact that it is made up wholly of images, and therefore, just as sensations, so are ideas subject to the laws of growth and decay. The laws of association which were explanatory rather than descriptive ("as scientific laws must always be") were originally four in number. It is, however, possible and better to substitute one descriptive formula for these laws. The author gives the following: "Whenever a sensory or imaginal process occurs in consciousness, there are likely to appear with it (of course, in imaginal terms) all those sensory and imaginal processes which occurred together with it in any earlier conscious present."

The section on memory and imagination opens with a description of the course of the image following a perception. Three things are possible; the image either disappears, or it approaches more and more that image which is held as the type of the class to which it belongs, or it continues in another setting of images. Individuals also vary greatly as to the degree of retention and the rapidity of learning. The old saying of "slow and sure" will have to fall before experimentation. The quick learner has an advantage from the first and his retention is as good. Even cramming, if properly indulged in, has its advantages.

The recognition consciousness is distinguished by organic sensations and feelings. The organic sensations do not seem essential. Recognition is "probably wholly a matter of feeling. It is a feeling in the narrower sense, pleasurable in its affective quality, diffusely organic in its sensory." Lack of recognition is just as positive an experience as recognition, and is characterized by a feeling of strangeness. With each successive recognition of an object the feeling of familiarity and the organic reactions decrease until finally they disappear altogether. We then have direct apprehension. Some psychologists believe that apprehension involves some recognition, that there is never this complete unconsciousness. The author thinks that they are confusing recognition with meaning. When a situation to which we are thoroughly adapted is changed, for example, by the removal of some object, the organism reacts to this new situation; more than that there is then, as it were, a recognition in imagination of the removed object. The memory consciousness is the same as the recognitive consciousness, "with the sole difference that the focal process, the process remembered, is an idea and not a perception." A short paragraph upon illusions of recognition and memory deals principally with paramnesia and depersonalization. In paramnesia we have evidence of an abnormally weak associative tendency. The details of the physiological conditions of depersonalization are not known, but there is undoubtedly disintegration of the cortical set which represents our adjustment to the external world.

The section on action begins with a general description of the reaction experiments. Great care is advised in the framing of instructions so that they shall not be ambiguous, and introspection is considered necessary in order to ascertain the exact attitude of the reactor.

The psychologist must now ask what a reaction is. The answer is that a reaction is an action. An analysis of a typical action consciousness shows a pattern like the following: "a preliminary phase, in which the prominent things are kinæsthesia and the idea of end or result; a central phase, in which some object is apprehended in relation to, in the sense of, the idea of end; and a final phase, in which the perception of result is set on a background of kinæsthesia, of the sensations aroused by the actual movement." This "predetermination in the sense of the idea of end" is all important for the action consciousness. It must be emphasized, in order to obtain a correct idea of the author's views, not only in regard to action, but also in regard to meaning and to the thought processes, that the determining tendencies

may be entirely physiological; they may have no representation in consciousness. After the above definition of action one is able to understand the definition of suggestion which differs psychologically in no wise from any other idea. "A suggestion is any stimulus, external or internal, accompanied or unaccompanied by consciousness, which touches off a determining tendency."

A short paragraph on the will ends the section. As the will has figured under attention and action, there only remains to describe the will consciousness which seems to be a conscious "acceptance" appearing as an organic set carrying the meaning "I agree." This must not be confused with an unique "action element" in consciousness; introspection has never found such an element. Its origin is only traceable to the psychologist's study.

In the section on emotion the author deplors the lack of systematic experimentation, for which lack he sees no valid excuse. This much, however, may be said for an emotional consciousness, that it is a temporal process, beginning abruptly and dying down gradually. It is highly complex and is above all a through and through affective consciousness, for "the core of every emotion is a feeling." It is also an "insistently organic" and "predetermined consciousness." As to the relation of feeling and emotion, "a feeling is a simpler emotion, an emotion a more complex feeling."

For the author there can be no emotive memory in the strict sense of the term, because there is no affective image. Images of organic reaction, if they do exist, are very rare. The emotive memory can only exist for believers in the James-Lange theory, and then only if organic images really do exist.

The section ends with a description and classification of sentiments. The difference between sentiment and emotion is one of primary and secondary attention. In emotion the situation overwhelms the organism; in sentiment the attention is divided, and there is a critical attitude.

The sections already reviewed are preliminary to a thorough understanding of the last section of the book, the section on thought. The author himself through his years of experimentation smoothed a path through sensation, perception, imagery, attention, action, and emotion, in order to be able to investigate this last and most important problem, which has engaged the attention of the psychologists on both sides of the Atlantic for the last ten years, and which has divided them into several camps. It is in this last section that the author's position is most clearly defined. It is here that he draws his ends together into a complete system.

It is about the question of the nature of the conscious attitude that the battle has been and still is being waged. It is therefore with a description of what is meant by attitude and with a review of the rival views that the section begins. What a conscious attitude is may best be explained by examples: "the consciousness of general helplessness in trying to understand a complicated argument, or the consciousness that 27 will go evenly into 243." These attitudes are most difficult of analysis, and that has led some psychologists to maintain "that there are awareness of meaning and awareness of relation, which cannot be reduced to simpler terms, but must be accepted as non-sensory and imageless components of the higher mental processes. The author believes, on the contrary, that the attitudes, so far as they are conscious at all, are always analyzable." In other words, some psychologists believe in a thought element, while others, including the author, believe "that the conscious attitudes are always made up of the three elementary processes, sensation, image, and affection." It is important to add that "the attitudes presuppose all manner of complex synergy in the cortex" and that this cortical set may or may not be represented in consciousness.

Inasmuch as thought requires symbols, and language is a system of symbols, the author believes that thought and language have developed side by side. "The origin of language marks an epoch in mental development; and the growth of language embodies the growth of thought." The problem of the origin of language and of semantic change is briefly discussed.

Abstract ideas and generalization and abstraction are then considered. The imaginal complex of an abstract idea, the psychological, is concrete. It is the logical meaning which is abstract. Neither is the imaginal complex a composite photograph. The meaning, of course, may be carried in imaginal terms; on the other hand, this imagery may drop out of consciousness altogether and the abstract idea be represented by a word with "the stamp of abstractness" upon it. In the latter case "the verbal image stands for both idea and for context."

As to the process of comparison, the author denies the necessity of an intervening image in successive comparison. Even the second stimulus is not always necessary, the judgment being made upon the absolute impression.

The psychology of judgment is still a very incomplete chapter of the science. Wundt's definition is modified. The foregoing suggestion may be present in consciousness as imagery, or it may be only a cortical set. Judgment is placed by the author under the genus of voluntary action.

The last subject to be considered is "the self." The author believes that not only is self-consciousness not always present, but that it comparatively rarely occurs.

Lack of space prevents a more detailed account of the many interesting features of the book, but even this short review, it is hoped, will show that the book is more than a text-book. It is, in fact, a complete system of psychology according to the structural method. The reviewer believes that the book will be of great assistance in the teaching of psychology, and that its influence will be potent in the development of the science.

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ATTENTION AND INTEREST, A STUDY IN PSYCHOLOGY AND EDUCATION. By *Felix Arnold, Ph.D.* New York. The Macmillan Company, 1910. Pp. vii+272.

THE notable thing about this book is its method, not its content. In content it is a sufficiently clear but altogether commonplace exposition of some of the text-book truisms and laboratory verifications of the matters of interest and attention. Attention is defined as "a process of sensorimotor control which tends to increase the clearness and distinctness of the given field" (p. 176). The term control, which is central, is nowhere properly defined, and is used loosely to indicate adaptative response. Under the definition attention is analyzed into its "subjective" and "objective" elements, and its development is marked from a primary stage, in which it begins with sensory stimulation involving instinctive motor response, without definite direction to a secondary stage, in which image and ideas define its direction and an "end" aids in its persistence. An intermediate stage, the "assimilative" is also noted. In this stage sense stimulation has "ideal reinforcement" and habit is the means of motor control. The structure and development of attention are explained in terms of the 'functional psychology,' the point of departure being the need of adaptation to environment. The whole business is accomplished in five chapters, the first analyzing the "given situation in attention"; the second, "the objective aspect of attention"; the third, "the psychophysical aspect of attention"; the fourth, "the physiological aspects of attention." Chapter V recapitulates.

Interest is treated in three chapters, under two rubrics: "the motor aspect of interest" and the "ideal aspect of interest," and a recapitulation. By definition interest is "an attitude taken toward a situation," and characterized by "(1) motor ten-

dencies and feelings of expectation, anticipation, and strain; (2) by meaning implicit in the situation or by free images and ideas; and (3) by a reference of attitude and ideal content to some future condition of the self" (p. 224). Curiosity, expectation, and conscious desire are called types of interest. Like attention, it also is assigned three stages of development. In the primary stage "a present situation leads directly to feelings of pleasure, satisfaction, etc." In the secondary stage it "inheres in means" that lead to a cause of such feelings, while in the "acquired" stage, the means become ends in themselves. Also the structure and growth of interest are explained in "functional" terms.

The two chapters on education are advice to teachers, based on the preceding analysis.

Dr. Arnold's method in this book may be an interesting pedagogical device, and after one gets his intent, is easy enough, but it is a bit obfuscating at first, largely because of his careless manner in indicating his intent. Under the headings "description," "illustration," "development," "explanation," "definition," he describes, illustrates, suggests the growth of, and defines his subject-matter, but one is puzzled at the beginning, as to what description is description of, etc. His headings refer backwards rather than forwards. The same carelessness extends to his use of certain terms. The most obvious is the word "ideal." The customary signification of that word is not psychological, but moral. Ideals are values, types, meanings, not states of minds, objective and external. In Dr. Arnold's sense ideal means "like an idea," or "of the substance of an idea," a state of mind, subjective, with a psychological content. There is an unnecessary and altogether unjustified use of "ideal" for "ideational."

H. M. KALLEN.

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STUDIES IN SPIRITISM. *By Amy E. Tanner, with an Introduction by G. Stanley Hall.* New York. Appleton, 1910. Pp. xxxix + 408.

THE cause of psychical research has suffered so often and so severely from the fond enthusiasms of its friends, that one is amused to note that it may also gain heavily now and then from the over-reaching bigotry or other unfairness of its enemies. The *Studies in Spiritism*, by Dr. Tanner and Dr. Hall (for the latter has contributed more than an introduction, cf. pp. 177-185, 259-273, and he took, as well, the more active part in the narrated sittings with Mrs. Piper) is a volume which would throw some inter-

esting light on the psychology of mediumship, were it not that it is written from a violently *ex parte* position, from an attitude so hostile to "psychical research," that it has led the genial writer or writers, all unconsciously let us suppose, perilously close to a biassed manipulation of documentary evidence, certainly to the frequent use of unjustifiable innuendo and, more dismally although less reprehensibly, to repeated efforts at a playful and facetious literary style.

The way in which documentary material is treated in this book has been sufficiently discussed by Dr. J. H. Hyslop (*Jour. of the Amer. Soc. for Psych. Research*, 1911, v, 1-98), who has shown that an absolutely just impression of previous sittings, reports, etc., is by no means always conveyed. Insinuation, furthermore, is employed so frequently and so irresponsibly as to destroy the confidence of the most sympathetic reader. Thus it is stated (p. 74) that "Hyslop gives us a sidelight apropos [sic] of the possibility of Hodgson himself being implicated in fraud." This is probably the first time that it has been suggested that the late Richard Hodgson, known by everybody to have been the soul of candour and integrity, was a charlatan; yet the context shows not the slightest ground for such defamation. The passage, if it is to mean anything in its context, must be construed into "implicated in Mrs. Piper's fraud," although the aspersion on Mrs. Piper is likewise gratuitous and unsubstantiated. Again on the same page it is intimated that possibly Mrs. Piper has cultivated "a love of directories, etc.," i.e., of the means for acquiring surreptitious knowledge about her sitters; and similar dark hints of systematic and hyper-ingenious fraud on the part of Mrs. Piper are scattered broadcast through the book, although these are unsupported by a shred of evidence. There can be no doubt of the cumulative effect of these reiterations, nor can we doubt that this damaging use of suggestion is intentional, and yet the author if challenged for a categorical statement about Mrs. Piper would, of course, point triumphantly to the statement of Dr. Hall (p. 18), "that Mrs. Piper has never" been "convicted of fraud." Again in the considerations of "coincidences" and other "veridical" material obtained from sittings, Dr. Tanner, aware that disbelief is the smarter attitude and the easier to carry off, regularly alleges a number of utterly whimsical and remote hypotheses by way of explanation — none of them in the least plausible — and then adds brightly: "Until these possibilities are disposed of, at least, we do not need to assume spirit agencies at work." No, probably not; but Dr. Tanner should at least take care that persons, like the present reviewer, to whom the spirit hypothesis is naturally

repugnant and whose interest in psychical research has hitherto been of the most languid sort, are not pricked on to unwonted interest in "spirits" by the very lameness of the alternative assumptions which she presents. Nor are Dr. Hall's chapters marked by any superior fairness of statement. The dictum (p. 19), "Never in our own or in other Piper sittings was any full record kept of what her interlocutors said," will certainly amaze all persons who know anything of the precautions taken in this respect by the late Richard Hodgson, and will mislead everybody else; and the clause soon to follow (p. 20), "while the presence of a stenographer which we proposed was objected to," is worthy at least of remark. Mrs. Piper is thoroughly habituated to the presence of one or more stenographers at her sittings, and Dr. Tanner, speaking of the same point (p. 166) does not intimate that any objection was raised to the presence of stenographers in this case.

Perhaps one of the most significant remarks in a composition that is fairly rich in dark hints is the following (p. 18): "For years she [Mrs. Piper] had been the more or less private oracle of one of our leading and very influential psychologists." Now there are two persons whom the ordinary reader would possibly think of on reading this statement, and by the merest coincidence (of course) the names of both are given a few lines lower on the same page; but one of these, whose "more or less private oracle" Mrs. Piper may truly be said to have been, was by no means "one of our leading and very influential psychologists"; the other one was decidedly this last, but it would be a falsehood to say or to imply that Mrs. Piper was ever his "more or less private oracle." One wonders, then, whom Dr. Hall can have intended in the statement above quoted.

The general flavor of this book is only heightened by the playful and familiar literary style adopted by Dr. Hall, showing how thoroughly at home he is wherever placed: "Dear ghosts of my relatives, I did not mean to slight you, and pray accept my apologies and my profound regrets if you really were trying to ring me up" (p. 28). Or again (p. 182), "Then comes my dear father, but how agonizing! He only presents his card as a present and says good by," etc.

All things considered, a book less damaging to the cause of psychical research could hardly have been thrown together. In the treatment of these much-mooted topics, requiring as they do the most limpid candour, the perspicacious reader is everywhere put on his guard; where impartiality is requisite, the reader finds the most unworthy innuendo; and where sobriety and judiciousness were most in order, one encounters tasteless if not shocking

imbecilities. The elder co-author will surely be disappointed in his hope, "that this book will mark a turn of the tide," a revulsion against "psychical research."

EDWIN B. HOLT.

UNTERSUCHUNGEN ZUR KENNTNISS DER PSYCHOMOTORISCHEN BEWEGUNGSTORUNGEN BEI GEISTESKRANKEN, 1908, AND WEITERE UNTERSUCHUNGEN AN GEISTESKRANKEN MIT PSYCHOMOTORISCHEN STORUNGEN, 1909. By *Karl Kleist (Klinkhardt)*.

THESE two books have aroused a widespread interest, and although it is not necessary to discuss here their detailed and technical psychiatric aspects, it is desirable to report the general trend of them. Anatomists have greeted Kleist's work as a valuable step towards the neurological formulation of mental symptoms, while from the psychological side it has been regarded as a last desperate effort to uphold the possibility of such a formulation.

Essentially it consists of an extension of Wernicke's attempts to describe and explain mental symptoms in anatomical language. Wernicke studied the psycho-motor symptoms of insane patients, the stereotyped movements, mannerisms, and so on, and interpreted them as being due to transcortical disturbances, quite independent of any disorder of will or thought. He referred to them as a "motility psychosis," which happened to occur in various forms of insanity, and maintained that the mental processes corresponding to the motor manifestations were themselves normal. It will be remembered that Wernicke largely based these views on his knowledge of aphasia, which he took as a prototype of psycho-motor disturbances. He laid great stress on the motor manifestations, postulating as a cause of them a transcortical interruption on the motor side of the sensory-psycho-motor reflex arc. The inadequacy of this conception was soon apparent, even in the sphere of aphasia itself, where it was seen that he had attached too much importance to the purely motor-speech aspects, and all recent investigations have accentuated the difficulty of harmonizing the mental and anatomical changes found in this condition.

Since Wernicke's day great progress has been made in our knowledge of the intra-cerebral paths, of the choreiform and athetoid symptoms related to thalamic and cerebellar lesions, and notably in the precise localization, by Liepmann and others, of the anatomical basis of the elaborate apraxic disorders of movement. On the basis of this, Kleist has been emboldened to carry Wernicke's attempts further, and to go beyond the latter in endeavoring to explain even some of the mental disturbances themselves as being

secondary to the motor ones. In the main standpoint, however, he agrees with Wernicke, regarding as he does the motor disturbances as independent of any primary mental disorder.

In the reviewer's opinion Kleist's work is fraught with so many grave errors of both method and evidence that it cannot be regarded as one that promises to be fruitful to the science of psychopathology; a few of the serious objections that can be raised may briefly be mentioned.

In the first place the whole basis of the reasoning is purely conjectural, it being founded not only on the dangerous ground of analogy, but on analogies of a particularly doubtful order. Kleist lays great stress on the resemblances between insane stereotyped movements and the choreiform, athetoid, and clonic movements met with in various lesions of the fronto-cerebellar paths. He therefore infers that the causative lesions of the former set must be similarly distributed to those of the latter. The fundamental differences between the two sets of movements are overlooked, and the assumption calmly made that because certain resemblances can be established, and it is known that the one set has no psychical origin, therefore the other has not. This can only be described as a very flimsy basis on which to erect such far-reaching generalizations.

Let us take as the simplest illustration not a perverted movement, but a deficient one, e.g., a hysterical monoplegia. It is true that here the motor apparatus is not functioning, but does it follow that it itself must be diseased? Suppose that the defect is still more specialized, e.g., that the person can use the limb for all purposes except for writing a letter. He wishes to write a letter, but cannot. The nerves and muscles employed for this purpose refuse to function as in the normal, therefore they must be diseased; one can then describe the condition as an affection of the forearm muscles, of the brachial plexus, or of the pyramidal tracts, just as one personally feels inclined. But to do so would be to ignore all our knowledge of inhibition and psychical dissociation, to confound aboulia with apraxia. Kleist does, in fact, take a very similar instance. He found in his patients that often they wanted to carry out a given movement, but said they couldn't; he immediately concluded that the defect is a *paralytic* one, and discusses the anatomical localization of the supposed lesion. But what becomes of this lesion if the same patient five minutes later recovers the power of carrying out the given movement, and psychological observation reveals the previous action of a definite mental inhibition? Kleist simply ignores this alternative explanation. One of the symptoms studied by Kleist is catalepsy. In

certain psychoses (e.g., the manicdepressive) this may disappear and reappear almost from one moment to another. To postulate an anatomical lesion in the motor apparatus, of which not even a microscopic trace is visible post mortem, and which can produce such remarkable effects, does not clarify the problem in any way. It would merely increase the obscurity of it by introducing us to a pathological process totally unlike any with which we are familiar, and would plunge us back into the nebulous conception of "functional disorders of the nervous system," from which there has of late seemed some hope of emerging.

Kleist's way of dealing with the question of the accompanying mental symptoms is just as unsatisfactory. These he divides into two classes, those supposedly secondary to the motor ones, and those independent of them. Of the former nothing need be said, except that it would be difficult to find a modern psychologist who would subscribe to the principles on which he traces them to primary motor defects. Consideration of the second class leads to the following untenable position. Kleist regards the two classes as being of independent origin, structure, and significance, but even he is bound to admit the obvious close association between them, and he explains this by assuming that the underlying lesions must in both cases affect neighboring areas of the frontal lobe. When one recalls how intimate this association is, the assumption that we have to do with two independent and sharply separated affections — which only happen to be associated through a hypothetical anatomical contiguity — is seen to be not merely gratuitous, but in the highest degree improbable. That the stereotypies and mannerisms in question are expressions of the fundamental disorder of the whole personality is accepted by most clinical psychologists who have studied the matter, and indeed in numerous instances is an unavoidable conclusion. In other words, it is evident that many, and probable that most, of such symptoms have a definite psychological meaning, which cannot be expressed in anatomical language. It is true that the psychological interpretation of many of them is difficult, and sometimes, owing to the limited accessibility of the patients to our means of investigation, impossible; but since Jung's epoch-making work on the psychology of dementia præcox we have gained not only a deeper knowledge of the psychological mechanisms that are the cause of these difficulties, but also the reasonable expectation that advance along the lines he has laid down will give us a fully intelligible explanation of the psychopathological processes involved in the production of these distorted mental manifestations.

ERNEST JONES.

JAHRBUCH FÜR PSYCHOANALYTISCHE UND PSYCHOPATHOLOGISCHE FORSCHUNGEN. 1910. Band II. 1e Hälfte.

1. Abraham, S. I. Ueber hysterische Traumzustände. Loewenfeld has recently called attention to peculiar dream states that sometimes occur in hysterics, in which the outer world seems novel, strange, or visionary. Janet has described similar conditions, but ascribes them to psychasthenia. Abraham has made a psycho-analysis of several instances, six of which are here narrated. He finds, just as Freud has found in the case of ordinary hysterical seizures, that the underlying process is an intensely emotional phantasy, of either an evident or a disguised sexual nature, and he explains the various clinical features in the light of his observations.

2. Jung, S. 33. Ueber Konflikte der kindlichen Seele. This is a more detailed account of a case already published by Jung in the *American Journal of Psychology*, April, 1910. The patient, a little girl of four, suffered from anxiety states and phobias. The analysis, which led to a complete recovery, demonstrated the activity of psychological mechanisms, sexual symbolism, etc., similar to those described by Freud in an analysis of a boy of the same age. These two cases are of fundamental importance in the lessons they teach for the prophylaxis of the neuroses, and also as affording *direct* confirmation of the conception of infantile sexuality reached by Freud through adult analyses.

3. Sadger, S. 59. Ein Fall von multipler Perversionen mit hysterischen Absenzen. This is a very detailed account of a finely made psycho-analysis. It is convincingly written and deserves careful reading in the original.

4. Pfister, S. 134. Analytische Untersuchungen über die Psychologie des Hasses und der Versöhnung. Pfister, a Zurich clergyman, has made extensive use of psycho-analysis to guide him in the understanding and correction of moral troubles, depravities, etc. He finds the knowledge thus gained to be of far-reaching importance in regard to moral, ethical, and religious problems. The present article is the account of an analysis in the case of a boy of fourteen, one of whose difficulties was an abnormal hatred of an elder brother.

5. Freud, S. 179. "Ueber den Gegensinn der Urworte." This is really a short review of a book published in 1884 by a philologist, Abel. In the *Traumdeutung* Freud had called attention to the empiric finding, of which he could at the time give no explanation, that in dream analysis a given word might signify either its own meaning or the exact opposite. Abel has pointed out the same occurrence in various old languages, e.g., early

Egyptian, and shown that traces of it are to be found to the present day (e.g., "to cleave" in English means both "to adhere to" and "to divide"). In other words, we have here a process that is primordial in the development of language; dream life recurs to it just as it does to other primordial mental processes that are found in the earliest stages of both individual and racial development.

6. Alph. Maeder. S. 185. *Analysen von zwei Fällen von Dementia Praecox (paranoide Form)*. After relating clearly expounded analyses of two cases of paranoid dementia, Maeder makes some very interesting observations of a general nature. This is the most significant contribution to our knowledge of dementia praecox since the appearance of Jung's book, four years ago. The mechanisms of "animation," "projection," "exteriorization," "introversion," "compensation," etc., are vividly described and exemplified. Perhaps the point of chief value is the clarification Maeder contributes to the alternating processes of narrowing and expanding of the personality that are so puzzling in the pathogenesis of dementia praecox.

7. Riklin. S. 246. *Aus der Analyse einer Zwangsneurose*. This represents the most fully described study yet published of a case of compulsion-neurosis, and is of very great interest. No general conclusions are drawn, beyond the confirmation of Freud's views on the subject published in the previous number of the *Jahrbuch*.

8. Jung. S. 312. *Randbemerkungen zu dem Buch von Wittels: Die Sexuelle Not*. In reference to Wittel's keen criticism of present day morality Jung makes a number of very sane observations on the relation of science to social questions.

9. Ernest Jones. S. 316. *Bericht über die neuere englische und amerikanische Litteratur zur klinischen Psychologie und Psychopathologie*. A sketch of the different tendencies in Anglo-Saxon countries as regards clinical psychology is first given, and then an account of the individual productions of the past few years; more than nine tenths of the latter appeared in American journals. The author describes four main movements, two in each country; only the later two, both born in America, are still active. Roughly speaking, they are as follows: The first, headed by Braid, began about 1840, the second, by F. W. H. Meyers, about 1880, the third, by Morton Prince, about 1890, and the fourth, by Adolf Meyer, some ten years later. A specially full account is given of the work done by Prince, Sidis, and Meyer.

10. Neiditsch. S. 347. *Ueber den gegenwertigen Stand der Freudschen Psychologie in Russland*.

11. Assagioli. S. 349. Die Freudschen Lehren in Italien. These are short accounts of the progress made by the Freudian movement in Russia and Italy respectively.

12. Jung. S. 356. Referate uber psychologische Arbeiten schweizerischer Autoren. This is a very valuable general review of the writings of the Swiss school of psycho-analysis, including Bleuler, Maeder, Riklin, Jung himself, etc.

ERNEST JONES.

BOOKS RECEIVED

THE WORLD OF DREAMS. By *Havelock Ellis*. Houghton, Mifflin Co., Boston and New York. 1911. pp. 288. \$2.00 net.

MOTO-SENSORY DEVELOPMENT. By *George V. N. Dearborn*. Warwick & York Inc., Baltimore, Md., 1910, pp. 215. \$1.50 net.

CAN WE BE SURE OF MORTALITY? By *Wm. A. Cheney*. Roger Brothers, New York, 1910, pp. 204.

DIE PHANOMENOLOGIE DES ICH IN IHREM GRUNDPROBLEMEN. By *Von Dr. Phil. Konstantin Oesterreich Privatdozent der Philosophie an der Universitat Tubingen*. Leipzig: Verlag von Johann Ambrosius Barth, 1910, pp. 532. M. 15.

THE WASSERMANN SERO-DIAGNOSIS OF SYPHILIS IN ITS APPLICATION TO PSYCHIATRY. Nervous and Mental Disease Monograph Series No. 5. By *Dr. Felix Plaut, Scientific Assistant in the Psychiatric Clinic of the University of Munich*. Authorized Translation by *Smith Ely Jelliffe, M.D., Ph.D., Professor of Psychiatry, Fordham University, New York, and Louis Casamajor, A.M., M.D., Assistant New York Neurological Institute*. The Journal of Nervous and Mental Diseases Publishing Company, New York, 1911, pp. 188. \$2.00

PROCEEDINGS OF THE AMERICAN SOCIETY FOR PSYCHICAL RESEARCH. *A Case of Hysteria* by *Dr. W. H. Hamilton, Dr. J. S. Smith, and James H. Hyslop*. \$6 net, pp. 672.

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A PLEA FOR THE STUDY OF PHILOSOPHIC METHODS IN PREPARATION FOR PSYCHOANALYTIC WORK¹

BY JAMES J. PUTNAM, M.D., OF BOSTON

LEST this communication may seem critical of the psychoanalytic method and its founders, I will begin by saying that my feeling with reference to the movement, of which this method is the basis, as well as toward Sigmund Freud himself and his colleagues, is one of deep and grateful appreciation. What I am here offering should not be regarded as in any proper sense a criticism of their position, but rather as the suggestion of a supplement to it. The new insight into human nature made possible through the industry of these men seems to me of extraordinary value, and susceptible of verification to a remarkable extent. More than once during the study of some obscure case, after almost concluding that here, at last, I had found a manifest exception to the rules which the observations of Freud and his colleagues seemed to have established, a still deeper search, a still deeper probing of the patient's consciousness and buried memories have shown me that I was wrong. It is truly remarkable what a touchstone has been put into our hands wherewith to recognize the real motives which underlie apparent motives, and, underneath the faults and failings, the fears and habits of adult life, to see the workings out of the instinctive cravings of imaginative, pleasure-seeking, and pain-shunning

¹Read at the Annual Meeting of the American Psycho-Pathological Association, Baltimore, May 10, 1911.

infancy, dragging back the adult from the fulfilment of his higher destiny. The enumeration of the gains that have already been secured, of the paths of promise that have been opened to us through these fruitful investigations and these applications of the biogenetic principle in the study of human personality, would be a recital of imposing character. It is not only for medicine that these advances have been won. It has been clearly shown that the great pieces of imaginative and creative literature of the world, especially the great world poems, such as the marvelous tragedies and epics of Greece, the fairy stories and the myths which have stood so long the test of time, and so, too, the manifestations of wit and humor and the many other modes of naive expression in which the soul of man instinctively lays open its hidden treasure house, are all permeated by the same tendency that underlies the signs and symptoms of the hysterias, the phobias, the compulsions. The symbolisms used in them, like the symbolisms of language, of dreams, and of life itself is to a considerable extent a sex symbolism.

I believe, also, that one may admit, with Freud, that the principle of the "conservation of energy" can be applied as profitably with reference to mental phenomena as it has been with reference to physical phenomena. An experience is a fact to be reckoned with just as much as is a certain quantity of heat. One of Freud's greatest services has lain in his demonstration of the fact that every thought and action counts for some result. If it disappears in one form it will surely reappear under some new and unexpected guise, like Proteus under the grasp of Hercules, in the great fable.

But, although I am fully convinced that the applications here referred to, both of the biogenetic principle and of the principle of the "conservation of energy," afford illuminating partial explanations of individual and racial evolution, I am equally convinced that we are in danger of utilizing these principles to the tacit exclusion of others which are still more significant. Even in the domain of physics, the statement "no energy is ever lost," if true in a certain sense, that is, true with reference to special

groups of artificially selected conditions, is false if taken as justifying all the inferences and implications which are often drawn from it, and is therefore dangerous as a working principle in applied psychology. This is a very important distinction; for, as we all know, and as psychoanalytic studies have freshly demonstrated by striking illustrations, the human mind is keener in its dim intuitions and in its power of reasoning by implication and inference, than its feeble power of conscious, accurate expression would lead one to suppose. Education is largely a process of self-discovery. You bend yourself to teach the child and find, to your surprise, that he is already a wise man in disguise.

I have paused to dwell upon this principle, because the whole object of the present paper is to show that any one who carries his psychoanalysis far enough, and who makes himself the first object of his investigation, as every psychoanalyst ought to do, will find evidence of dim reasonings of great importance that underlie the conflicts of the childish instincts and modify these conflicts at each moment. It is for us to see, so far as it is practicable and necessary, that these crude inferential reasonings are duly scrutinized and utilized for good and not for evil. The main service of the psychoanalytic investigations which have been made thus far, under the impulse of Freud's genius, has been that of forcing us to recognize the repressed devils that lurk within us. It is obvious, however, that we should never have felt these tendencies as "devils" and repressed them unless we had had a standard of the good. It is usually assumed that this standard of the good is only something imposed on us by society. But if we trace the matter back, we find that it rests ultimately on far more personal grounds; that it implies nothing less than a dim recognition on our part that this belief in "the good" is one of the most real of all our intuitions; that we cannot help thinking in these and kindred terms, and comparing our present "bad" with our possible "good," any more than we can help thinking in terms of time and space and yet dimly recognizing that these terms are, in fact, only symbolic representations of a real but unpicturable existence not limited by time or space.

To return, then, to the principle of the conservation of

energy, I would positively assert that we have absolutely no right to draw therefrom, as is very often, though tacitly, done, the implication that as no energy is ever lost, so no energy is ever gained, and that we live in a world of determinism, where the same old forces, coming no one knows from where, are shuffled to and fro, like the bits of glass in a kaleidoscope. In such a world as this, thought and will would have, of course, no power to create anything new, and the process of adaptation would not be, as it now is, a process of intelligent modification wrought by each individual on both his environment and himself, but a simple moulding of man on the world of nature, as wax is moulded on a stamp. No one really accepts such a world as this, not even those who claim to do so; it is, however, the kind of world to which natural science points, and the kind of world which should be logically accepted by those who, following too closely the demands of the law of the conservation of energy, seek a strictly monistic universe founded on these supposed laws.¹ If we would give our allegiance to a better world than this, we must begin by recognizing that the formulas of natural science express only a portion of the truth. Of course, where the specific aims which these sciences serve are alone at stake, it is convenient to speak of the "conservation of energy" as if it were one of the deep underlying principles of life and not merely the description of sequences of phenomena. It does not signify that a student of chemistry or physics works only with the external appearances under which real, self-active energy is cloaked, or that he talks freely of "atoms" or "invariable laws" as if these terms really stood for the deepest facts that the human mind can reach. He knows well, if he is wise, that these formulas are but modes of speech, and that his studies contribute nothing to our knowledge of real causes. But this complacent habit of neglecting the study of the "real," needful as it is in physics, is bad in psychology, and becomes intolerable when the object to be studied is a human being, thrilling with hopes and fears, dimly conscious of a destiny,

¹Cf. *Traum und Mythos*, von Dr. Karl Abraham. *Schriften zur Angewandten Seelenkunde*; herausgegeben von Prof. Dr. Sigm. Freud, Viertes Heft, pp. 71, 72.

dimly aware of the fact that in so far as he is intelligent, in so far as he possesses the gift of intuition and a will, in so far, in short, as he is "real," he is a participant in the primal energy of the universe and must be studied as such.

That a thorough student of psychoanalysis, earnestly desiring to learn all that can be learned about the nature of mental phenomena, should be contented to assume that he can neglect that portion of the knowledge of the mind which he can get only by philosophic methods, would be equivalent to his assuming that from observing the symptoms of a psychoneurosis he could learn to understand the real conditions of which these symptoms are but symbols. The mind contains a real, permanently abiding element which partakes of the nature of the real, permanently abiding energy of which the life of the universe itself is made. From the standpoint of the nature of his mind, a man belongs to the eternal and immortal realities of the universe. In order to realize this, he must learn to believe that he speaks the truth when he talks of the world of spirit, and says that the things which are unseen are eternal. Ultimate truth, like motion, hope, love, and the sense of beauty, are unpicturable. But the picturable life is temporal and a symbolic representation of the unpicturable life, which for us is the only true life. To this real, creative element of the mental life, on which all our striving, all our power of will and renewal of thought depends, I venture to give the name of *psyche generatrix* or *mens creativa*. Because one is compelled to see in a man a creature with a history that points back to a motionless mass of lime and phosphorus, and to admit that at each meal he does obeisance to that portion of his genesis, one is not therefore debarred from realizing that organic life and the history of organic evolution would be unintelligible; that the sight of so much human misery and sin would be intolerable, if we did not dimly recognize that with organic life comes the power and the necessity of reaching out continually toward the unseen world of real existence which we are constantly striving to express in this finite and symbolic world, but can never thoroughly express except in a life of infinite duration.

We must regard the facts collected by natural science

as of limited and partial value, and not to be taken as furnishing the basis for a complete explanation of the phenomena of life, and by the same token we ought to feel ourselves obliged to make the same assertion with regard to the genetic explanation of human personality which the psychoanalytic method has done so much to establish. Through the use of this method we have come to know so many influences hitherto unknown to us which play a large part in the evolution of the adult human being, that the temptation is a strong one to push this principle further than is justifiable. The way of escape from this is that of making a more thorough study of the workings of the human mind as determined by the great students of philosophy, who, although now often discredited, represent perhaps the best outcome of human evolution. The genetic principle has been of immense service, but as usually understood, it leads us, if followed too closely, to a deadlock. The evolution suggested by this principle is evolution on a straight line, which, as far as we can see, begins nowhere and ends nowhere. In fact, evolution should rather be expressed as a circular process.¹ It begins in the unseen, but real and infinite world of the spirit, the *psyche generatrix*, and consists in a series of attempts to express the life of the spirit in finite form, followed at each moment by an ever-renewed recognition that this expression is imperfect. These recognitions of imperfection imply an equal number of returns, in thought, of the self-expressing mind toward its infinite source, and this circular movement of the mind characterizes both evolution regarded as a whole and every act of life. In everything that we do or feel we realize that we *are* more than we can now express, and in thus recognizing our

¹I offer this simple diagram without attempting adequately to explain it, as that would be impossible in this connection:

A 

B |.·|.·|.·|.·|.·|.

A is the mathematical symbol of infinity, and may be used for hinting at the fact that the mind, in itself, is logically independent of space and time, and of its attempts at finite expression. It is the inexhaustible source of renewing effort.

B hints at the fact that the mind is continually attempting to express its total nature in finite acts (symbols), then denying that these attempts are adequate, and returning (as by the dotted lines) to a recognition of its inexhaustible power of accomplishing more and better things.

finite incapacity to express ourselves and the symbolic nature of the attempt to do so, we are forced dimly to perceive that we have an infinite and real though unpicturable existence as a background for our finite strivings.

It is not alone, then, the phenomena of a man's *earthly genesis* that we must study if we would understand the subtle tides and tumults of his life; the workings of his *psyche generatrix* itself must also be the object of our investigation. Kant has said, "Humanity must never be treated as a *thing*." Real existence is a self-active, causal energy, and not a "thing." It is only by virtue of our possessing this causal energy, this *psyche generatrix*, that we become aware of the existence of real causality at all. In the succession of natural phenomena there is no causality; causality comes only with the vital efforts of living, and so conscious, beings, and finds its best expression in the will, acting at its best; that is, acting in accordance with the highest principles of spiritual progress.

I object to the explanation given, in accordance with psychogenetic principles, of the evolution of the instincts of the infant into the conduct of the grown man, when the genetic principle is treated as if it were the only one at stake, whereas, in fact, the influence of the will, even though feeble and wrongly guided, and the influence of the recognition on the part of the mind, in each of its acts, that it has infinite possibilities which it cannot now express, never can be ruled out of court. In the admirable monograph¹ by Abraham, above referred to, the assertion is made that the men of the primitive, uncultured world had no philosophic or religious ideas which were afterward symbolized in myths; but this assertion is surely in need of modification. In the technical sense, of course, primitive human beings had, and newborn children have, no philosophy or religion. It must, however, be believed that they did have a vague recognition of their own creative power, a vague sense of *being* more than they could express, a vague sense that their own finiteness implies an infinite existence of some sort as a background. These feelings, shadowy though they doubtless were, took necessarily a logical precedence

¹Traum und Mythos. l. c.

even of the personal cravings and wishes in which the sexual and other primitive instincts sought expression. If we would really get to the bottom of the mental conflicts of our patients and ourselves, we positively must learn, through philosophic studies, to take cognizance of this primary schism between the sense of our infinite origin and the necessity which we are under of attempting to express ourselves at each moment in a finite form, for it is the existence of this schism with all that it implies that, in my opinion and in that of many others much wiser than myself, gives the first impulse to the creation of myths and to the conflicts out of which nervous symptoms spring. The struggles between our infantile instincts and the influences tending toward a conventional life do indeed contribute the picturesque, symbolic basis of this conflict, and give ever-renewed reasons for its persistence; but the original cause of the conflict itself lies farther back.

I do not feel quite sure how much positive use psychoanalysts can make of these philosophic principles in the actual treatment or training of their patients. It is my belief that some use can be made of them, just as use has been made of them for the teaching of children in the kindergarten. The primary requisite, however, is that we, as physicians, should, ourselves, have these principles in our minds, for without them we cannot do adequate justice, in thought, to our patients' deepest cravings and intuitions. Without them we cannot even explain our own cravings and intuitions.

It is also a mistake to suppose that the "unconscious" contains only the sense of the bad, the "shady" side of our natures. The recognition of the bad implies the recognition of the good. A struggle implies a sense of a possible goal better than that which now draws us, and these better elements of the mental life are represented in our unconscious and subconscious minds. They are unconscious because they cannot be expressed in words.

Civilization is said to depend on the transference to higher and more broadly social aims, of the energy hitherto spent in obedience to the simpler, the dominant instincts, especially the sexual instinct with its great mission of race

perpetuation. But though this statement perhaps covers the case of the animals, who see only what is before them, and of plants that see nothing, it is very far from covering the case of man. For every man, so I contend, has a sense of being able to effect something through his "will," and also dim, subconscious visions in which the logical formulas of philosophic reasoning are foreshadowed and the scheme of the universe is intuitively perceived; and with these feelings come a deep sense of obligation.

He may learn to neglect or to deny these visions, but he has them all the same, and may be encouraged to realize the fact. If he does so, he will learn to see the truth of the seeming paradox that the mind is conscious of its own acts, so that the "recognition," which occurs at every moment of our lives, is not merely the rediscovery of a familiar object, but the rediscovery of ourselves.

The person who arrives consciously at this stage of thought becomes not merely something of a metaphysician; he becomes also a more serious and reflective man; a person better prepared to become aware of his spiritual origin, his spiritual destiny, and of the obligations that go with this knowledge.

Believe me, I am not disposed to waste time in regretting that those who have thus far had the psychoanalytic movement in their charge have followed the scientific method thus exclusively; if they had not done so they would probably have failed to accomplish what they have accomplished, and we should still be urging our patients to get well solely by dint of will and conscience, and with insufficient knowledge of themselves.

But the time has come to make a long step forward. The aim to which we are practically, if not avowedly committed, is that of making a complete study of our patients' mental lives, and it is simply impossible for any one to do this at all thoroughly without having had a thorough training in the methods of philosophical as well as of scientific research and some recognition of the moral, social, and intellectual conclusions to which these researches have already led.

Fortunately, even those who care but little for phi-

losophy, and are content to take for earnest Voltaire's scoffing jest, "*Quand on parle de ce q'on ne comprend pas et que ceux qui entendent ne comprennent pas non plus, on fait de la metaphysique*,"—even those accept and utilize many philosophic and metaphysical conclusions without knowing it.

The law of the conservation of energy knows no conscience, no moral obligation, and no will, in any real sense; but we all recognize conscience, will, and obligation, even without intending it.

When I first began tentatively to use the powerful weapons which the psychoanalytic method has put into our hands, I endeavored to rely wholly on the analysis itself for the therapeutic outcome. I accepted, not indeed explicitly, but implicitly, the view that the physician's part in this treatment was solely that of urging the patient onward, deeper and deeper, into his own complexes, only seeing to it that he should not deceive himself, that he should not too soon believe that the end of his voyage of discovery was at hand.

I took it for granted that the physician's function ended when he had helped the patient to remove certain sorts of handicaps to progress, by forcing him to see the real facts at stake, and that he was under no obligation to assume any responsibility for the character of the progress itself.

Furthermore, the handicaps to be removed, so I believed, were of a specific sort. They were not handicaps due to ignorance, but those due to the existence of unfavorable emotional complexes of the kinds so much discussed. In other words, I thought that it was not our business to instruct the patient, to supply the positive side of the re-education which he needed to undergo, but only to place him in a better position to obtain his education elsewhere.

I still believe that the main portion of our work should be of the sort that I have indicated. But, little by little, I have arrived at the conviction that there is a subtle influence of sympathy and appreciation,—often expressible even in words, though sometimes difficult of expression—which makes the work of the physician who believes in the

truths which I have hinted at as having become established by philosophic study and religious insight, of more value than that of the man who does not hold this attitude.

It might be thought that any considerable interest on the physician's part in philosophy (and in religion, which is philosophy expressed in symbolic and poetic form) would impair his ability to carry on his psychoanalytic investigations with due vigor. I think, however, that this danger is chimerical. Psychoanalysis is and should be recognized as being an instrument, not a doctrine. It binds us to no particular faith; it does not prevent us from holding any conviction as to universal truths.

I doubt, however, whether psychoanalysis by itself gives us all we need. It almost always happens that there are some features in the patient's case which can be best defined in moral terms. The patient "ought" or "ought not" to do this or that. The grounds on which this moral status of the patient rests can be approached through psychoanalytic investigation, but can be better understood, as I believe, if the patient is willing to make that kind of mental analysis which will lead him to see his obligations in the light of a recognition of his origin and destiny. I will not assert that we are bound to force every patient to conclusions such as these. It might sometimes be unnecessary, sometimes impossible, to do so. What we can and ought to do, however, is to feel ourselves wholly sympathetic towards all, even the crudest, subconscious or unconscious leanings of the patient in the direction of the truths that we hold to be important and philosophically sound. We can and should help him to unravel that portion of his unconscious yearnings which point, not alone towards his earthly genesis, but also towards his spiritual genesis. Every man, however ignorant, has a claim to a moral balance, a broad sense of obligation, a sense of moral values independent of earthly success, as a sort of birthright. The "normal" man is a moral person, or one who has the capacity for becoming so. To have failed to become developed in this direction is to have "symptoms" that need attention. The significance of this proposition is not weakened by the obvious fact that the reverse is also true; that an emotional or verbal over-

accentuation of these moral ideas may become a symptom of disease.

The great poem in which Dante represents his descent into hell under the leadership of Virgil, his ascent of the hill of purgatory, and his flight through paradise, typifies the journey into the depths of one's own soul and memory, which psychoanalysis makes possible in a new and intensified form. It is not desirable to enter on such a journey, which begins with the "dark wood" of introspection, unless there is a good prospect of continuing it until the logical end of it is within sight. The physician, at least, should have a clear vision of the best outcome.

I may restate my argument in the following form: The psychoanalytic method, to which we owe so much, is not simply a means of teaching the patient to become intimately acquainted with his own history and motives. Most patients learn through their treatment to reason on the facts which they observe and may be led to make this reasoning more or less profound. Every reasoning process may be ranged, broadly speaking, under one or another of three heads. The simplest form of reasoning is that in which individual objects are noted and discriminated. This is the ordinary reasoning of so-called "common sense." A man is a man, a cow a cow, "the falling apple suggests not a universal law of nature, but a means of gratifying an individual appetite."¹ It is, however, an interesting fact that the persons technically untrained in science or philosophy, who take the facts of observation largely in this fashion, have often a more philosophic insight than those of the next class, the "scientific" persons who have taught themselves to deny their intuitions. The men who have taken life simply have had crude but partially correct insight into the significance of dreams, as Freud has pointed out, and so, too, the insight furnished by their religion and their faith contains presentiments that are deeply scientific. The unpicturable world of the spirit is accepted by them without argument, and while they are not logical and thoroughgoing in their convictions, they do recognize, when

¹Cf. Address on Philosophy, by Nicholas Murray Butler, Columbia University, 1908.

at their best, that evil and illness are something more than meaningless calamities.

The next form of reasoning is that in which objects are noted with reference to their relations to each other. This is the reasoning of science and of those persons who rely upon the genetic principle to explain the evolution of the individual and of the race. For such persons the universe is bound together in such fashion that nothing can happen in any portion of the physical or the mental world without inducing some change in every other portion.

It is assumed that no new energy can be either lost or created, although it is admitted that the forces which we see in operation are all interchangeable and finally reducible to some one force, which, however, no effort is made to account for. The evolution conceived of under this form of reasoning is absolutely deterministic. Consciousness, obligation, will, are terms used simply to describe events, not to designate real causes. They are creations, not creators. This is the scheme which most psychoanalysts seem thus far to have accepted as final. It is, of course, admitted that the mere fact of using the psychoanalytic method does not, strictly speaking, oblige any one to adopt the form of reasoning of which I am now speaking, but I have looked in vain for evidence that the leaders in our movement hold beliefs which would imply the use of any other form of reasoning than this "scientific" form. As I have said above, the curve of evolution at which this reasoning points is a straight line, which begins nowhere in particular and ends nowhere in particular; for surely the production of a "superman," like ourselves, except for being a few shades better, cannot be regarded as a logical goal for all our strivings and our sorrow.

The third form of the reasoning process is that which sees the universe, not merely as a collection of individuals, not merely as a series of impersonal, related objects or forces, but as a partial expression of the personal life of conscious beings, and therefore always to be thought of as a unified totality. This "totality" can be seen as underlying every act and as capable of giving new dignity and

meaning to every thoughtful, reasoned act, even of imperfect beings like ourselves.

The "relativity" of science is here transformed into a unification expressive of the conscious volition of intelligent beings. Whatever a man does is done with a dim consciousness that his acts are, inferentially, based on a recognition of the bonds that connect him, as a moral being, with every other man, and with the source of energy which underlies the universe. The third form of reasoning makes this dim consciousness a clear consciousness; it takes it out of the subconscious and brings it into the focal point of knowledge and recognition. It would be useless to attempt, in this brief space, to give a further description of the pre-suppositions and conclusions which this form of reasoning involves. Those who wish to study them can find ample opportunity, and without this study it is impossible really to know the human mind. We can, indeed, see many of the handicaps from which our patients suffer, but we cannot adequately sympathize with the strivings through which they seek to raise themselves to a better plane.

The hard battle which the leaders of the psychoanalytic movement have fought has been a battle of accurate observation, concerning itself, as I think, with a single phase of evolution. They have worked as students of natural history rather than as philosophic thinkers, and, in fact, the likeness of Freud's attitude to that of Darwin has often been present to my mind. But Darwin, great leader though he was, did not succeed in stating all the influences that lead to the modification of the species; and there have been thinkers of high merit who have maintained that one significant weakness of his doctrine lies in its scant recognition of the influence of the human consciousness and will, unpicturable as these are. The group of those whose beliefs and arguments, if logically carried out, would bring them into harmony on this point is larger than it seems. It contains not only men like Bergson, who makes his *poussée vitale* the controlling influence in biological evolution of every grade, and Judd, the able psychologist of Chicago, who has recently written on the influence of consciousness and will in the evolution of the mind and of human insti-

tutions, but also the best representatives of present-day political economy, who have definitely broken with the *laissez-faire* doctrines of Ricardo and Adam Smith, and have learned to recognize that the conflicts of the will and the moral sense of living men, conscious of a higher destiny, cannot be treated as equivalent to the conflicts of self-interest. Finally, and most important of all, the advocates of the validity of the will include the followers of Plato and Aristotle, of Kant and Hegel, and all the deepest thinkers of the world.

I have already said that the plea which I have urged is rather for a more thorough study of philosophic methods and results by those who practise psychoanalysis in the interest of a broader outlook on their part, than for a systematic utilization of the knowledge thus acquired in our routine dealings with our patients. But while ready to make this admission, I do so only under a certain protest. One feels inclined to say that, inasmuch as every improvement takes place gradually, it is enough that the patient should see or feel the existence of a goal a short distance ahead of him. So long as he has something to strive for, it is thought he does not need to see the ultimate and distant goal, even if a nobler one. An obligation lying near at hand, which he can grasp, and has a good prospect of being able to meet, is assumed to supply as much real motive as a more shadowy obligation which he cannot fully understand. In fact, however, I do not believe that this principle is sound. The biblical sentiment that "the people who do not see visions shall perish from the face of the earth" is a more nearly accurate expression of the truth. If I am right in my belief that every man has a dim intuition that there is something in him which makes him akin to the creative energy of the universe, and that his sense of obligation is one element in that something, and if this intuition can be deepened by a process of self-analysis, then, surely, we can do him a service if we help him to make such an analysis.

Finally, I believe that there are deeper causes at work in the making of myths than even the conflicts between the infantile instincts and emotions based on bodily experiences and desires. These deeper causes reside in the very con-

stitution of the mind, which makes its influence felt even at the very dawn of life and from then on in every mental act.

No act, no attempt at expression, no experience, can occur without giving rise to the sense of incompleteness through which the mind recognizes on the one hand that it *is* more than it can now define itself as being; and, on the other hand, that it must go on, without ceasing, trying to define itself afresh. In each act the mind goes out, as it were, from itself, only to return to itself and rediscover itself. The dim realization of this outgoing and returning finds its symbolic expression in the constant phenomenon of recurrence in the sun myths, and of endeavor and failure and re-endeavor in many myths of gods and heroes. Not only are the myths themselves symbolic; the very instincts of infancy through which it has recently been sought to explain them are themselves symbolic of these deeper mental processes that lie behind.

We who practise psychoanalysis learn well to know what symbolism means. We should, then, more than any others, succeed in realizing that these primal fundamental elements, the inevitable constituents of every mental act, must have symbols which are bound to be deeper than any others.

A CASE ILLUSTRATING SO-CALLED DEMON POSSESSION

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DEMONIACAL possession as a church question was formerly accepted literally, being based upon the passage in John x. 20: "He hath a demon and is mad." In the middle ages epidemics of demon possession occurred, as those of St. Brigitta, Loudon, Pledran, Aix, etc., which showed various phases of mental dissociation upon this basis. Nor is exorcism or the casting out of demons any longer indulged in by modern churchmen, though we still find some orthodox adherents who subscribe to this belief. In medical literature can be found two examples of demon possession which resemble the history of the patient which I depict — the case of Achilles described by Janet¹ and the account of Father Surin.² As a type of obsession not often found to-day, the following recital should therefore be of interest. I shall first give the patient's account of the possession given to me in running association after Freud's method and in letters which I requested him to write. This material is of course much condensed:

"In regard to the voice I hear talking to me all the time, it was through my investigating spiritualism and watching and listening for what I could hear in the evenings after reading the newspaper that it commenced. One evening it began to talk to me, telling me some funny stories, and it kept that up for a week, when one Saturday evening it hypnotized me as I sat in my chair, and I went to bed that night and was in bed until Monday, hypnotized, I suppose, for I was seeing pictures of all kinds all the time until I got up to go to work Monday morning. He has been talking

¹ Janet, *Nevroses et idées fixes*, i, pp. 377-389.

² *Disposition du pere Surin, d'Apres Berillon-Dualite. Cerebrale*, 102. Also quoted by Ribot, *Diseases of Personality*, p. 120. See also Nevins, *Demon Possession*, 1894.

to me ever since. He says he is the devil from hell and he is going to take me to hell as soon as he gets ready. He makes me speak words as if he has my tongue in his control when he is talking to me; but if I talk to any person, I have control. He makes me smell different things and he will tell me about it at the same time. It feels as if there is a flea or bug on my eye, nose, or throat, or any place, and he will say to me, 'Brush that bug off.' He bothers my eyes, so that I cannot see right at times, and he bothers my stomach at night, saying, 'I'll fix your stomach for you so you cannot eat.' Three weeks ago, he shook my brain like you would a handkerchief, saying to me, 'See what I am doing to you, I'll fix this block of yours.' He talks to me all day and night, waking me at night to tell me what he made me dream. He makes my head hurt in the back and it feels hot, and he says it will be worse later on with me.

"'John,' he says, 'you never will have another minute's peace as long as you live, and when you die it will be worse. I came here to worry you and I am going to play with you, like a cat does with a mouse, and when I get tired of you, I am going to kill you. That is, I am going to make you kill yourself, but I am going to make you kill someone else first. That black-eyed doctor thinks himself smart. Oh, you won't know you are doing it, you will want to knock something off or cut something out, and you will think it just has to be done. I can set you daffy in a minute. I have your brains right under my thumbs. Now you have not a thought coming; I am doing your thinking and telling you things. I can shut your thoughts off and you will never know it. I won't let you know things until I get good and ready.'

"He tells me every little act I did in my life, saying, 'Now what in h —— did you do that for?' He will tell me to do this or that at my work when I am going to do something, the same as you would tell me to do it, or he says, 'I will stay here till you come, when I will go,' and he will keep this nagging up all day like a talking machine. Sometimes I go nearly crazy. This is a sample, a drop in the bucket to what I hear:

"'You are a d —— f —— for telling the doctor. He

thinks that what you say and write is what you think or have thought and says he will make you see it that way. You d — f —, I can think and make you think what I want you to. Peace in mind is all there is to life, and let me see you get it. I'll not let you forget your troubles. No, the doctor shan't even know of them. If you had done that way, resisted at first, you would not have been bothered with me. You will be sorry for it the way you are getting stubborn. You won't get me out of your mind. You are onto me, to get you worked up and put mean feelings on you, trying to make you mad, but I'll fool you and the doctor yet.'

"Let's write a book, John, about hell. I have asked you often and if you don't I will carry you to hell. Do it, John; no one knows about hell and I want to tell them. If you do, I will give you a little peace. D — you for resisting. The doctor can explain all he wants, but I'll show you yet you can't fight me off.'

"It is a continual dream with me all night. I would be asleep, but it kept running things into my mind all night, which seems like a lot of dreams. In the morning after getting up, it would go all over these things, saying it wanted to do it that way. 'You can use your own mind if I let you, John, but I am not going to. You are a fool for sitting down and letting me get in your head. Oh, you can get mad if you want to, but you cannot hurt me, all you can do is to kill yourself and that will please me. Do you think that doctor can do you good? Well, he might know something about this business, but if he knows anything that will interfere with me in my work on your head, the minute he goes to do it,— well, if he goes to do anything that will do you any good, he will have to kill me or make me weak enough that you can overpower me. That is, your mind will be too strong for me to do anything with. John, when I see that is going to happen, plump, off goes your block. Mind you, now. I will kill you if I see that man is doing any good or doing me any harm. I have every nerve and every little thing in your head and body in my control, so it is up to you now to let that doctor do something, if he can, or stay away from him. Now John, that doctor from his

questions to-day thinks you allowed family troubles to bother you, but it is not that. If you had got up out of that chair in the evening after you finished reading the paper, it might have been different.'

"Tell that man to go to h——. He cannot do you any good. He might think he is a doctor, but he is not a brain fixer, like I am, for I am the devil from hell. The doctor is putting you to hell as fast as you can go. I am the steam that runs the engine, and the engine is the brain. Your doctor might fix the engine like a machinist, but I am the steam to the brain or engine, and you can't fix the steam.

"Those spiritualists told you not to repeat anything I said, and now you are writing a letter dictated by the devil from the depths of hell, and I am going to take you there as soon as I get ready. It might be to-night, and might be in a year. I will go with you to see that doctor and he might hypnotize you until you think you are better, but as soon as you come out of that condition I will have you just the same.'

"When your wife separated from you, you were a good man. You did what you thought right toward her, and she thought she was doing the same, but neither was right. It is not what you think, but what the Lord God himself thinks. We will get into trouble with the doctor if we don't scratch that out. No, don't write it.'

"What do you mean, anyhow, writing this way when I am going to take you to hell. Don't give the doctor this to read; don't write any more; he can't save you from me. I can't write any more. I mean, I cannot take time to have you write any more. But tell him this, I can fix more people in a holy jiffy in my way than he can ever in his lifetime. Do you think it is you and not I writing this?

"You are more contented, are you? I'll have you again, though. I am sicker than a dog, cannot talk to you. Don't tell the doctor on me. Tell him that he cannot hurt me.'"

TWO MONTHS LATER

"Well, doctor, I can see this thing more plainly now. It was caused by my thinking and worrying continually and arguing it over and over in my mind. I was weak in body

and I worried and talked it over so much in my mind that my brains became exhausted and my mind ran at will. It ran in the same channel as it formerly did before it got so weak and now the opponent or the one I was talking to is giving it to me. Of course it says it is something else and not my former thought. It would say something, when I come back at it; then it comes again with something to the contrary to what I said. One word brings on another, and away they go. I cannot hold my end of the talk or stop it. Now this is as you told me it was, but I just saw it plainly this evening. If I am quiet, it always starts to talk to me, saying contradictory things. Then I have a quiet time, as at present. I can think it over and try to decide what it is in the way you spoke about. It is not like talk, except when it does talk, and then it is always in opposition, always discouraging, always trying to give me or put me in trouble."

FOUR MONTHS LATER

"It does not talk as much as it did, and when it does, it does not seem to hold me so much as it did. Almost anything takes my mind away from it. When at work it puts in part of the time talking and the rest of the time putting different feelings over me, discouragement or weakness or dissatisfaction. I forget the feelings and it quits then. It has been trying to show me that I am no better, but it cannot change my mind about that. I do not know, but it does not seem that it will be talking much longer. I know now it is not the steam that runs my brain, but that my steam is weak, and that caused all this. I just hear a word now and then. I often have a blend between a word and a pleased feeling which makes me feel foolish, and I try to get away from it. I never had the headache in my life, like I hear other people say it is. My feeling is that of a big head, feeling dumb and dull, so that I cannot center my mind on anything; I try to and then try to study and think of something. Then I wake up and start to walk, but do not know where I go, but think and dream of doing things pleasant for people. I often have a dull pain across the forehead or my head will pain in the back as if full of something heavy or like a corkscrew sticking there and being twisted

by some one. I will then get dizzy, or if I shake my head or stoop, I get dizzy and have sounds in my ears like steam, or better still like the noises you hear when in an extremely quiet place. The aches are like what I had before my trouble started, but not so strong. The prostrated feeling came first, just as I have given it you, so that I took to drinking to forget myself and I thought the two together made what I have got."

SIX MONTHS LATER

"Dear Doctor, I write this to let you know how my health is and how I have improved in the sickness you treated me for. Well, my health is fine, I couldn't feel better. I feel robust and strong. I am forty-five years old to-day, and I'll bet you a good smoke that I am good for forty-five years more.

"The talking I heard is just about gone; I have become able to be indifferent and not pay attention to it. I may get two words mixed up, half the sound of each or the wrong word first and then it will say I made you do it. This is about all I have to contend with at present. I feel sure that I will be like I was years ago again.¹

It was about three years ago that I admitted the subject of these notes into my consulting room. He came, he told me, to get some medicine for sleeplessness. Further questioning elicited that he worked daily, was separated from his wife, living alone, and a thorough examination revealed no evidence of any physical disease. I did not try to delve closely into his life at this first visit, but later on gained from him the details which follow, utilizing all possible methods of psychic analysis.

His parents are not only living but remarkably well, and he comes of long-lived Irish Presbyterian stock. A rather commonplace life he has led, having had very little schooling, working steadily as a machinist until he rose to be shop superintendent, marrying twenty years ago a woman

¹I was unable to do with McB. as did Janet with Achilles, "Je demandai au démon comme dernière preuve de sa puissance, qu' il voulut bien endormir. Achille dans un fauteuil et l'endormir complètement sans qu' il put résister. Achille essay a en vain de lutter couitil le sommeil qui l'envallussait.

who was temperamentally the opposite, quarreling, and finally separating.

Contrary to what I expected, it was difficult to get him to speak much about his wife and his opinions of her. I could see him alertly gazing at me whenever I opened this subject in ordinary conversation, it forming a resistance in the sense of Freud. Actual hypnosis also failed me, but finally through utilizing a metronome and placing him passive, after the method of Sidis, gained from him the following details:

She was childish, only thought of herself, wanted the little property he had, was jealous of his love for his first child, would leave him alone without warning and go to her mother, resented his success in work. Four years ago he became tired of going after her and she did not voluntarily return. He supports her, but does not see her or his children. He is too proud to do so. This explanation was accompanied by tears and evidences of much grief. He worried very much over the disgrace.

The other side of the picture as elicited from him shows that he took to drinking, in order not to worry about his wife's actions. Yet he would often go down on his knees and pray to keep up and not resort to drink. He also feared his wife, felt at times that she cast spells over him, that she put spies to watch him, that she tried to hypnotize him, waving her hands over him when he was dozing.

His wife whom I visited I found to be a quiet woman, who told me that her frequent desertions were due to fears as a result of blows, that she was neglectful, but it was on account of distress over his actions, that she knew of his claim that she tried to hypnotize him, that he accused her of poisoning the coffee, that through his sister's influence he believed in spiritualism, even before her final separation; that he had a slate in his room, upon which he expected answers from the spirit world. "You would think nothing but a wretch would leave him, but what could I do?" As additional evidence, they have a three-year-old child, born after she left him, whom he has never seen. His failure to see this child he does not ascribe to any defect in his character, but he is justified from his viewpoint. His pride pre-

vents him from going to his wife's home, and it was with tears that he tells me how he regrets not knowing his youngest child, and how much he reproaches his wife for alienating his children from him and bringing public opprobrium upon him.¹

Crystal gazing emphasized the break in his life which was caused by his marital troubles. All the pictures that he could see in the crystal were in connection with her. He saw a woman with black hair and a rose on the left side. "Why, it is my wife." He saw the house he first lived in after marriage.

Psycholeptic Crises.— At intervals of about six weeks for the last few years patient has had attacks which made him weak and short winded, and sleepy without his being able to sleep. He would stagger like a drunken man, and he would have paresthesia, especially formication over his face. In such attacks he finally would land at a saloon and under the influence of alcohol would feel better. He failed to get relief medically on any occasions when he had these attacks, so he took to rely on alcohol as a relief. Upon my insistent command that he desist from drink when his attacks came on, explaining to him the necessity of becoming indifferent to temporary sensations, he wrote to me, "The last few times I have had those feelings I spoke to you about, I tried to throw them off, like you told me to by thinking of other things and doing other things. The first time I had it for two days and I was nearly 'all in.' I tried to brace up, to cheer up, be happy and strong and wide awake, and suddenly succeeded, and it has been gone for good."

After his wife's separation he went to a married sister's home to live. This sister was a believer in spiritualism, who had before this occasionally interested him in mediumistic seances. Now, however, he threw himself into this life and tried to follow out the medium's instructions to "sit down at night and shut your eyes, make your mind a blank. You will hear sounds, and then voices, and if persistent see things."

¹The repression of the truth causing a "defense reaction" is apparent. This mechanism is often found with paranoid states, but never with hysteria or psychoasthenia.

He had had ringing ears before this and this was all he heard at first. One night nearly asleep, he sees a shadow and sits up startled. "It was his mother-in-law with a child in her arms." She rose from the floor and went out of the window. This hallucinatory result of autosuggestion is readily explained by his family worries, which are constantly with him, though he has attempted to repress them. His mother-in-law he, as is usual, believed to be a large cause of his wife's actions. This visualization occurred shortly after he heard of the birth of this last child of his. It at the time was thought by him to be real and gave impetus to the formation of his obsession, for he next found that the ringing in his ears at times took on the semblance of words, saying "talk something, think something." I also brought out the fact that about this time the medium had claimed to cast the devil out of a man, and the thought had come to him whether he could take possession of him. Then came the possession which I have already described. As the history shows the soil was fertile. He had an unmistakable hyperesthesia of his ideational centers, as shown by the sounds in his ears, his crises which I styled "psycholeptic," after Janet, and the sharpened attention resulting from his spiritualistic experiences. Add to this the emotional changes resulting from his marital quarrels, his wife's separation, the recent birth of another daughter unknown at the time to him, and we have sufficient reasons for the onset of an obsession. The extent of his autohypnosis at this time must have been intense, and is revealed even at present to me in two ways. Though he is now rid of his obsession and has no hankering after spiritualism, for, as he says, "Only people who worry go there. It is all badness and they call it a church," it is easy to disintegrate his personality. I might say that this man wins respect by his bearing. He is quiet, dignified, and has an intelligent, good-looking countenance. Place him at a table with a pad and pencil and command him to relax and write as he is impelled to and his arm and his hand tremble and the pencil traces the tremor, which grows in intensity. When stopped he feels, he tells me, as he did in the attacks I have described above, and he shows a dilated pupil, a hyperidrosis, and increased pulse rate and an

unsteady gait. As further evidence of a psychasthenic inadequacy he will cry and ask me not to bring his old condition back.

Again, in attempts at association studies, I was always held up short by a sudden change of personality. A few words would be associated normally, but as soon as I introduced a word like wife or home or child, a change would come over him and one of two things would happen; either a repetition of the same answer to every succeeding word, or the remark, "You are bringing out again the voices; there is no use going on with this." The repeating answers would be of the same character as "bad," "no good," "have nothing to do with my old life," etc. It was significant also to find a similar egocentric attitude which would brook no obtrusive, and to him unjust, criticism of his conduct. This characteristic combined with his autosuggestibility loomed up largely with him. Recently I also spent much time in going over his present dreams, which he wrote down for me, but never succeeded in finding in them anything but commonplace pictures, exemplifying his work, his family quarrels, and the people he met daily. A few were sensual, but of no significance that I could see.¹ I might remark that McB. has always lived a normal sexual life. McB. shows in the strength of his obsession a double personality. His life was filled with attacks which I have described under Janet's designation of psycholeptic crises. These must always have been from his meager description accompanied by evanescent mental changes, a secondary self in which he would beat his wife and drink. Forced back and fought against — witness his praying that Saturday night might not come, — it grew in strength and intensity. Held under during the day, often would the needed relaxation come at night, with the consequent ill-treating of his wife. He, however, was never conscious of this, and his statements concerning his wife are for him truthful. Then came his wife's final separation and the secondary personality grew in strength through this psychic trauma, and finally rose to consciousness as a demon possession and dominated his personality, its

¹They were dreams of beautiful figures, of woman's breasts, of having a female with him, etc.

ideational characteristics being traced to his spiritualistic seances.

We are prone to attempt to separate fixed ideas from delusional convictions, regarding obsessive ideas as a part of the psychoneuroses and delusions as present only in profound mental states, for contrast. The different criteria which are given to distinguish them need not be given, as they are familiar to all students of mental diseases. McB., while possessed of a devil, whose voice was continually talking and suggesting to him, recognized that it was not his real self, though he regarded it as having appropriated his brains, as it were, a continuous force over which he had no power. Like a fixed idea also, it never "corrupted his reason," he did his day's work, intermingled with his fellowmen and succeeded in suppressing any external manifestations of his altered personality. Yet like a delusion it pervaded and dominated his personality.

One other point in this history must be considered here also. McB. had definite delusions, paranoid in nature, about his wife. She tried to poison him, to hypnotize him, he was continually suspicious of her and he had wrong ideas concerning her care of his house. Here we see a definite picture of delusional convictions which would put him in the category of paranoia and would tend to make us view his devil possession as evidence of rudimentary or abortive paranoia, as Morselli uses the term. Obsessive ideas never or hardly ever occur in paranoia, says Tanzi,¹ and demonomania is a special form of paranoia, says Sidis.² We can say with certainty, however, that with McB. we have evidences of an altered personality, a secondary state rising to the threshold of consciousness governing his ideation without dominating him and a partial disintegration of personality being also revealed by his suspicions and fears of his wife.

We will not enter here into the question of paranoia, except in so far as is necessary for the discussion of the history in question. The atavistic conception of paranoia, so brilliantly expounded by Tanzi and vigorously combated by

¹Tanzi, *Text-book of Mental Diseases*, p. 156.

²Sidis, *Psychology of Suggestion*, p. 283.

Bianchi,¹ occurred to us in going over this history, and we feel, as Bianchi does, that "human evolution is slow, and primitive characteristics have not yet disappeared from mankind. Why, then, have recourse to a theory of atavism? Everything that the paranoic manifests in his delirium is found in his actual environment, or in another environment in which he lived at one period of his life." Accepting this, it does not negative Tanzi's² conception, however, of paranoics as living anachronisms, whose mysticism is the arrogant, violent, and personal explosion of a regressive and anticivic thought, "and in whose mind inanimate bodies, living creatures, the universe itself, but above all, the ego, reacquire the symbolical nature which they possessed in the consciousness of primitive man." Bianchi, however, in his conception of sensory insanity, where he groups what are really abortive types of paranoia and what the Kraepelin school would consider as types of dementia præcox, shows the impropriety of attempting too much in classification. A disregard of a mere classification of this patient was therefore strongly necessary in attempting any treatment. Friedman³ shows the shifting sands of classification clearly when in his study of paranoia he says, "I must not omit at the start to say that by the term 'mild paranoia' something else is meant than what I described some years ago under that heading."

The evolution of such obsessions as those of McB. is easily understood if we stop to consider what primitive man was and what elements of his personality, particularly in reference to superstitious and supernatural laws, are still found in supposedly cultured persons. Browning, in Mr. Sludge, "the medium," says:

"First comes the Bible's speech; then, history with the supernatural element, you know, all that we sucked in with our mother's milk,
Grew up with, got inside of us at last,
Till its found bone of bone and flesh of flesh.
See how we start with the miraculous,
And know it used to be, at all events:

¹Bianchi. *Psychiatry*, p. 575.

²Tanzi, p. 721.

³N. & M. Monograph Series, 1908.

What's the first step we take, and can't but take,
In arguing from the unknown to the obscure?
Why this: "What was before, may be to-day."
Since Samuel's ghost appeared to Saul, of course
My brother's spirit may appear to me."
Go tell your teacher that! What's his reply?
What brings a shade of doubt for the first time
O'er his brow late so luminous with faith?
"Such things have been," says he, "and there's no doubt
Such things may be, but I advise mistrust
Of eyes, ears, stomach, and more than all your brain,
Unless it be of your great-grandmother,
Whenever they propose a ghost to you."

McB.'s obsession may certainly be looked upon as a defensive neuropsychosis, after the idea of Freud, as he shows repression of painful memories. I am at present treating a patient of Dr. Hamer of this city, who shows a similar mechanism. She is annoyed by spirits watching her, touching her breasts and her genitals, cutting her, taunting her, and all this is so constant that she is in constant fear or dread. She was raped some years ago and this produced in her a great change. Her thoughts became almost unbearable. This man's dead wife even came to her one night in a dream and urged her to be friendly with him. The analysis of her thoughts and the conversion of her repressed memories into spirits became plain when we study her in the light of Freud's ideas. Unlike McB. she answers also to his views concerning infantile sexual memories, the only patient whom I have studied who does. She became sexually curious at the age of six from watching the animals on the farm where she lived, and at eight commenced to masturbate. Her disgust for the author of her seduction, the disgust tones which the memories of it evoked, the thoughts of what real love might mean by its comparison with her experience both in childhood and in the episode I mentioned, can be beautifully brought out in her analysis.¹ The development upon

¹Since writing this I have had another patient who shows this mechanism. Lest I be misunderstood I wish to state that Freud's theories fail us in most patients, that his symbolisms and dream explanations are artificial, and that only in these obsessed paranoid types have I found a "defense" mechanism as laid down by him.

this basis of a partial realization through imaginary personages ("spirits") by an uncultured individual, who had no power of visualization, is also readily understandable without theorizing concerning the disintegration of personality or presentation of split-off ideas with a tendency to fixation of the complex.

In considering McB. as a favorable subject for psychotherapy, we felt that his great autosuggestibility offered us good opportunities, realizing also that his painful hypermnnesia could through this means be effaced and that in his makeup the elements of suspicion and of pride were written so large that they could directly be attacked. Success depends so much upon a careful psychoanalysis, the building up of which I have attempted in previous pages, and its proper interpretation, that no condensed exposition of treatment explains. Leading McB. to understand his introspection, his increased suggestibility, his intense emotional state; teaching him how audible thought and dream hallucinations result; playing upon the component elements of fear, selfishness, suspicion, and egotism in his makeup, meant that, first, he felt that I did understand him and his sickness, and, secondly, that I was able to delve into actual conditions in order to influence him. Even with my success in helping McB. to quell this demon possession I am mindful of these words of Tanzi: "Perhaps he has followed my advice so well that the doctor believes there is realization of error where there is only clever dissimulation,"¹ especially when I consider the attempts at automatic writing and association studies, which, though they helped me in showing the weak elements in his personality which we had to counteract, also revealed to me the basal temperament of the man which no artifice or expedient could permanently alter.

¹Tanzi. Psychiatry.

FREUD'S THEORY OF WIT

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WHEN we examine the literature on wit from Aristotle to our present time, we are struck by the fact that despite its universality comparatively little has been written on the subject, and that although many excellent theories have been advanced, notably by Jean Paul, Theodore Vischer, and Fischer, none of these authors have gone deeply enough into the subject.

Without entering into detailed descriptions I shall simply state that the characteristic qualities of wit as given by the most prominent authors are the following: activity, the relation of the content of wit to our thoughts, the character of the playing judgment, the union of dissimilarities, contrasting ideas, sense in nonsense, the succession of confusion and clearness, the sudden emergence of the hidden, and the peculiar kind of brevity.

On close examination it can readily be seen that these qualities though readily demonstrable by many examples of wit represent only isolated fragments and give us little information about the deeper psychological mechanisms of wit. Indeed no author thoroughly explains the individual determinants of wit. Also the divisions of wit are based by some authors on the technical means, and by others on the usage of wit in speech. The reason for all these diversities and discrepancies is that, with the exception of Freud, no author penetrated deeply enough into the subject. Here, as in some other branches of normal and abnormal psychology Freud pushed on when the others have stopped, and in this book, "Der Witz und sein Beziehung zum Unbewussten," he solves the riddle of wit as he solved elsewhere the riddle of the neuroses and psychoses.

Following Freud I have divided this paper into the analytical, synthetical, and theoretical parts.

THE TECHNIQUE OF WIT

DeQuincey once remarked that old persons are apt to fall into "anecdotalage." The word *anecdotalage*, though in itself incomprehensible, can be readily analyzed to show its original full sense; and on analysis we find that it is made up of two words, *anecdote* and *dotage*. That is, instead of saying that old persons are apt to fall into dotage, and that old persons are fond of telling anecdotes, DeQuincey fuses the two words together forming a neologism, *anecdotalage*, and thus simultaneously expresses both ideas. The technique, therefore, lies in the fusion of the two words. Such a fusion of words is called condensation. Condensation is not a simple composition formed by the joining of the two words; there is a substitutive formation, i.e., instead of *anecdote* and *dotage* we get *anecdotalage*.

In a short story that I have recently read, one of the characters, a "sport," speaks of the Christmas season as the *alcoholidays*. By reduction it can be easily seen that we have here a compound word, a combination of *alcohol* and *holidays* which can be graphically represented as follows:

alcoHOL

HOLidays

ALCOHOLIDAYS

Here the condensation expresses the idea that holidays are conducive to alcoholic indulgence. In other words, we have here a fused word, which, though strange in appearance, can be easily understood in its proper context. This witticism may be described as a condensation with substitution.

The same mechanism is found in the following: A dramatic critic summarizing three paragraphs to the effect that most plays now produced in New York City are violent, emotional, and hysterical, remarks, "Thespis has taken up his home in Dramatteawan." The last word is a condensation of *drama* and *Matteawan*. The substitution not only expresses the critic's idea that most of the plays at present produced in this city are violent, emotional, and hysterical, that is insane, but it also contains a clever allusion to the

nature of the problems presented by most of these plays. Matteawan is a state hospital for criminal insane. Most of the plays are not only insane but also criminal, since they treat of murders, divorces, robberies, scandals, etc.

A jest which not long ago went the rounds in Europe referred to the late King Leopold as Cleopold, on account of his attachment to an actress whose first name was Cleo. This scandalous allusion is here produced by the addition of a single letter.¹

The examples thus far described come under the group of substitutive formation (*Ersatzbildung*). Brevity, which Shakespeare calls the soul of wit,² is common to them all; but brevity alone is not wit, else every laconism would be wit; it must be a special kind of brevity. Investigation shows that the brevity of the joke is often due to a special process which leaves its definite mark in the wording of the wit. This is the process of substitutive formation. If we apply the process of reduction to the wit, we find that wit depends solely on the verbal expression produced by the process of condensation. As yet, however, we do not understand how the process of condensation produces the most valuable part of wit, namely, the resultant mirth (*Lustgewinn*).

Condensation not only plays a part in wit, but also in dreams. We know that the dream is divided into the manifest and the latent thoughts.³ The latent thoughts are the actual thoughts underlying the dream, while the manifest thoughts, which are usually absurd and in appearance meaningless, are those which are recalled by the dreamer on awakening. The dream-work is the name given to the psychic processes which are responsible for the transformation of the latent into the manifest thoughts of the dream, and condensation may be named as one of these processes. Words, pictures, ideas, and events are all subject to the process of condensation. It may produce composite pictures or it may produce pictures resembling one object or person up to a certain ingredient or variation which is drawn from another source. Thus one of my patients saw in her dream

¹Freud, l. c., p. 12.

²Hamlet, Act II, Scene II, l. 90.

³Die Traumdeutung, Deuticke, Wein, 1910.

a creature resembling a centaur. She soon recognized the head as that of a male acquaintance, but the body, which was that of a horse, presented here a sexual symbolism.¹

From word condensation we shall now turn to thought condensation, and to illustrate this form the following witticism may be cited. A corporal shouts to his recruits during drill, "Keep it up, boys; courage and perseverance bring everything; the egg of Columbus was not laid in a day."

This jest is formed by the condensation of two separate items,—the saying, "Rome was not built in a day," and the anecdote of the egg of Columbus. What the corporal meant to say was, "All that you boys need is practice; it is as simple as it was for Columbus to stand the egg on end; don't be discouraged, Rome was not built in a day." He fused these two ideas, however, and thus produced the substitutive formation, "the egg of Columbus was not laid in a day," which on account of its absurdity and incongruity carries the wit of the jest. Similar mechanisms are found in dreams, but before continuing with our investigation of the analogies between the mechanism of wit and of the dream, we will examine the other processes producing wit.

Hood once remarked that he had to be a lively Hood for a livelihood. As can be readily seen the technique of this witticism is no longer condensation with substitutive formation, as it shows neither an omission nor an abbreviation. The thought is fully expressed as the speaker intended it. "I have to be a lively Hood for a livelihood." What, then, is the technique of this witticism? If we apply our method of reduction we find that the wit remains intact as long as we preserve the name, but that as soon as we replace it by another name, let us say Brown, every trace of wit disappears. This points to the fact that the wit lies in a twofold application of the name, first by itself, and then as a suffix.

I recall an excellent Italian *jeu d'esprit* of a like nature. At a court ball, in Italy, Napoleon Bonaparte brusquely remarked to a very brilliant lady, "*Tutti gli Italiani danzano*

¹Brill, *Dreams and Their Relations to the Neuroses*, N. Y. Medical Journal, April, 1910.

si male" (all Italians dance so badly), to which she quickly replied, "Non tutti ma buona parte" (Buonaparte). The lady's answer has a double meaning; it may mean, "Not all, but a great many" (buona parte); or the words "buona parte" may be read as one word and then her answer has a totally different significance. It becomes a sharp retort to Napoleon Buonaparte's insulting remark, "Not all Italians dance badly, but Buonaparte does." The wit here lies in the double application of the name, first as a whole and then divided in syllables like a charade, thus, buona parte
Buonaparte

The twofold application of the same words, once as a whole and once divided into syllables, is not the only technique differing from the technique of condensation. There are a great many other ways in which the same word or words may be used in order to serve as a technical means of wit. A witty jest may be produced by using the same words a second time, only slightly changed in their order. The slighter the change the better the technique. The following will illustrate the point.

At a ball in Washington a finished coquette gave Senator Chauncey M. Depew her fan to hold, and asked him if he could flirt a fan. "No," he replied, "but I can fan a flirt." (New York *Times*, March 13, 1910.) This witty jest was produced by merely changing the order of the words "flirt fan" to "fan flirt." It may also be taken as a good example of repartee.

Oliver Wendell Holmes said, "Put not your trust in money, but put your money in trust." Here, too, the witticism depends mostly on the transposition of the same words.

The manifold application of the same material can be greatly extended if the word or words carrying the wit are used first in one form and then slightly modified. Thus, the old classical saying, "Amantes Amentes" (lovers, lunatics) is an excellent example of this subgroup. The striking similarity between the two words serves to illustrate the close resemblance between love and insanity.

Some words lose their full meaning when used in certain connections, as shown in the following examples. Somebody observed to the younger Charles Mathews that blind

persons generally appear contented, and concluded by asking, "How can the blind be happy?" "I suppose," replied Mathews, "they see no reason why they shouldn't." This depends entirely on the meaning of the word *see* in the last sentence, where it has no longer the full meaning of seeing, but an idiomatic significance equivalent to knowing.

The technique of wit based on double meaning forms another subgroup of manifold application. Under this heading we have jests utilizing the double meaning of a name; for example, "No more, Pistol; I would not have you go off here. Discharge yourself of our company, Pistol." (Henry IV. 2.)

Question: "Why have the French rejected Lohengrin?"

Answer: "On Elsass's account."¹

We all know that Cardinal Merry Del Val has been blamed for the awkward Roosevelt-Vatican episode, and the journals the world over have predicted his downfall as the Pope's Secretary of State. The following letter written to the New York *Times*, by Eva S. Rosseau, sums up this popular opinion. "All will be Merry when Del says Val (e) to the Vatican."

The following may be cited as other examples of double meaning. "That Mighty Pen. The superiority of man to nature is continually illustrated. Nature needs an immense quantity of quills to make a goose with, but a man can make a goose of himself with one." (*Christian Register*.)

Here the wit depends entirely on the double meaning of the word *goose* and *quill*, which are first used in their original literal sense and then metaphorically. Double meaning may also be produced by play upon words. Here no violence is done to the word, it is not torn into syllables, nor does the word undergo any modification.

Example: Hostess to her guests: "Make yourselves at home; I always like my guests to be at home." The wit here produced by the play upon the words *at home*.

A physician, leaving the sick bed of a wife, remarked to the husband, "I don't like her looks." "I haven't liked her looks for some time," was the quick rejoinder of the husband.²

¹Freud, l. c., p. 25.

²Freud, l. c., p. 26.

The physicaian naturally referred to the condition of the wife, but he expressed his apprehension in such words as to afford the husband the means of utilizing them to assert his conjugal aversion.

There is one thing that strikes us when we examine the various groups described above; they all show a simple and distinct resemblance; they are all special forms of condensation. Thus the manifold application of the same material is nothing but a form of condensation, while the play upon words is merely a condensation without substitutive formation. In other words, all the technique mentioned above have one characteristic, namely, they all show a tendency toward economy of expression. But, as was said above, we must remember that not every tendency to economize expression is witty. It must possess a special form of economy, upon which the efficiency of the wit depends. But before discussing the question whether the economy mentioned is not counterbalanced by the expenditure of intellectual effort entailed in the formation of such expression, and the question who is the gainer by this economy, we will briefly consider puns.

Puns belong to the lowest form of wit. They can be formed with very little effort. A mere similarity between two words is enough to recall the relationship between the two meanings. Puns may be formed by a similarity of structure, sound, or initial letters. Fischer defines the pun as a bad play on words, because it does not play with the word as a word, but merely as a sound. If we eliminate from the pun the manifold application of the same material, we find that the emphasis lies on the concurrence of the two words serving to make the pun; this is only a subgroup of play upon words. The following will serve as illustrations.

The heading of a poetry column in a daily journal reads, "Verse and Worse."

At a gathering some one spoke disparagingly of a certain drama, and wound up by saying, "It was so poor that the first act had to be rewritten." "And now it is re-rotten," added the punster of the gathering.

In both examples the play is upon the words, not as words, but as sounds.

From the technique of witty words, which we have considered exclusively so far, we will now turn to the technique of witty thoughts, and by way of introduction the following examples will be examined.

Two Jews meet near a bathing establishment. "Have you taken a bath?" asked one. "How is that," answered the other, "is one missing?"¹

At first sight it would seem that the technique lies in the double meaning of the word *take*. For in the first case the word is used in a colorless idiomatic sense, while in the second it is the verb in its full meaning. This would be a case where the same word is taken now in the empty and now in the full sense, for the wit disappears if instead of using "to take a bath" we should substitute the simple equivalent "to bathe." But on closer examination we find that the reduction has not been applied to the right place. For the jest does not lie in the question, but rather in the answer, that is, in the counter question, "How is that, is one missing?" Provided the sense is not destroyed this answer cannot be robbed of its wit by any dilatation or variation. It is to be noted that in the answer of the second Jew the overlooking of the bath is more significant than the misconception of the word *take*.

In his distress a man borrowed money from a wealthy acquaintance.² The same day he was discovered by his creditor in a restaurant eating a dish of salmon with mayonnaise. The creditor reproached him in these words: "You borrow money of me and then order salmon with mayonnaise. Is that what you needed the money for?" "I don't quite understand you," responded the debtor. "When I have no money I cannot eat salmon with mayonnaise, when I have money I am not allowed to eat it. Well, when can I ever eat salmon with mayonnaise?"

Here we no longer discover any double meaning. The repetition of the words "salmon with mayonnaise" is not "a manifold application" of the same material, but an actual, identical repetition required by the content. It may be supposed that the striking thing about the answer is its

¹Freud. I. c., p. 36.

²Freud. I. c., p. 37.

logical character, but as a matter of fact the answer is illogical. The debtor endeavors to justify himself for spending the borrowed money on luxuries, and asks when he is to be allowed to eat salmon. But this is not a logical question; the creditor does not blame him for eating salmon on the day that he borrows the money, but reminds him that in his condition he has no right to think of such luxuries at all. The poor bon vivant disregards this only possible sense of the reproach, and answers about something else, and acts as though he did not understand the reproach. In other words, the answer is deviated from the sense of the reproach.

I could find no examples as good as these two taken from Professor Freud's book to illustrate a new technique of wit, namely, displacement. In both the examples mentioned the technique lies in the displacement of the psychic accent. The deviation is especially marked in the bath jest. The first says, "Have you taken a *bath*?" The emphasis lies on the bath element. The second answers as if the question were, "Have you *taken* a bath?" The displacement of the emphasis is made possible only by the wording "taken a bath." The displacement would have been impossible if the question had been, "Have you bathed?" The witless answer would have been, "Bathe? What do you mean? I don't know what that means." The technique of the wit depends on the displacement of the emphasis, from "to bathe" to "to take."

Let us now examine in what relation the technique of displacement stands to the expression of the wit. As shown in the second example (salmon with mayonnaise) the displacement-wit is totally independent of the verbal expression. It does not depend upon words, but on streams of thought. The elimination of the wit cannot be effected by any substitution of words as long as the sense is retained. Reduction is only possible by changing the stream of thought.

Another example of pure displacement is the following:

A rather shabby-looking patient consulted a famous specialist about his malady. After the doctor examined him and gave his opinion he demanded ten dollars, his regular office fee. The patient thought that it was too much,

and asked for a reduction. The doctor reduced his fee at first to five and then to three dollars, but the patient persisted that it was still too high a fee for him to pay. The doctor becoming impatient exclaimed, "If you are so poor why did you come to me? You should have gone to a free clinic!" "Nothing is too expensive for my health," responded the patient.

This is certainly in general a proper attitude, but not for this patient. The answer would be proper from the standpoint of a wealthy man who pays his bills without demurring.

The analysis of these examples shows a certain logical elaboration which serves to conceal a displacement of the stream of thought. There are, however, jokes which, instead of logic, display absurdity and nonsense, as the following joke.

A servant girl having been dismissed demands a recommendation from her mistress. The latter refuses to give it, saying, "I cannot recommend you, because you have not kept the house clean. Look at the dust and filth in these corners." "Excuse me, madam," replied the servant, "that is not my fault; that dirt and filth was there when I came a year ago."

The servant's answer is certainly absurd on its face; she attempts to excuse her negligence, but succeeds only in incriminating herself the more. Still, on closer consideration, we find that her answer is not as foolish as it appears; that this nonsense contains sense, and that it is this sense which turns the nonsense into wit. The servant in giving this answer makes herself appear foolish in order to show her mistress how foolish she herself is. The reduction is as follows: "You blame me for not keeping your house clean; you are no better housekeeper yourself. The dust and filth were in these corners when I came here; and, moreover, what kind of a mistress are you, to allow dirt and filth to remain in your house for over a year, and that, too, with a servant in the house! You are very foolish to blame me now."

The technique of this joke consists in advancing something apparently absurd and nonsensical, which, however,

discloses a sense serving to illustrate and represent some further actual absurdity and nonsense.

Besides the examples mentioned in the two groups, namely, of displacement and absurdity, we find other forms of wit showing faulty logic. A good example is the following:

A friend who had stopped in the street to speak to Charles Lamb said to him carelessly as they were parting, "By the way, my dear fellow, you owe me half a crown." "On the contrary," replied Lamb, "it is you who owe me half a crown; for if you will remember, I asked you for five shillings, and you could lend only me two and six." (*New York Times*, March 6, 1910.) The wit in this anecdote is due to false logic. What Lamb says may be true, but it is based on a false premise, as he wrongly assumes that the five shillings were his.

More typical examples of wit based on faulty logic are shown in the three following jokes from the German.

1. A marriage agent is defending the girl he has proposed against the attacks of the prospective fiancé. "I don't like the mother-in-law," the latter remarks; "she is a crabbed, foolish person." "That's true; however, you are not going to marry the mother-in-law, but the daughter." "Yes, but she is no longer young, and she isn't pretty, either." "That's nothing; if she isn't young and pretty you can trust her all the more." "But she hasn't much money." "Why talk of money? Are you marrying money? Don't you want a wife?" "But she's a hunchback!" "Well, what of that, do you expect her to have no blemishes at all?"¹

2. On being introduced to his prospective bride, the young man is rather unpleasantly disappointed, and drawing aside the marriage agent, he reproachfully whispers to him, "Why have you brought me here? She is ugly and old, she squints, has bad teeth and bleary eyes! . . ." "You can talk louder," interposes the marriage agent, "she's deaf, too."²

3. The prospective bridegroom makes his first call on the future bride with the marriage agent, and while waiting in the parlor for the appearance of the family, the agent

¹Freud. I. c., p. 47.

²Freud. I. c., p. 50.

calls the young man's attention to a glass closet containing a handsome silver set. "Just look at these things, you see how wealthy they are." "But isn't it possible," asks the suspicious young man, "that these nice things were borrowed for the occasion in order to give an impression of wealth?" "What an idea," answered the agent, protestingly; "who do you think would lend them anything?"¹

In joke (1) we have a girl of advanced age, ugly and deformed, who has little money and a repulsive mother, all of which is not very attractive to the young man. The marriage agent knows how to excuse each individual fault, except the inexcusable hunchback, which he must cope with. The girl apparently has many faults which can be overlooked, but one from which you cannot get away, and which is apt to hinder matrimony. The agent acts as if he had removed every individual fault by his excuses, forgetting that each leaves behind some depreciation which accumulates. He insists upon dealing with each factor individually, and refuses to connect them into a whole (sum). The entire joke shows a semblance of logic characteristic of sophism which serves here to conceal the false logic.

The fallacy or sophism in (2) and (3) may be designated as automatic. The marriage agent reacts a number of times, one after another, in the same manner, and continues in the same manner on the next occasion when it becomes unsuited and runs contrary to his intentions. Falling into the automatism of habit, he fails to adapt himself to the required situation. Thus the marriage agent in the second story is so fascinated by the failings and infirmities of the bride to be that he completes the list from his own knowledge, which it was neither his business nor his intention to do. In the third story he is so carried away by his zeal to convince the young man of the family's wealth, that he comes out with something which upsets all his efforts. In both examples the automatism triumphs over the appropriate variation of thought and expression.

The examples given below take us to another form of the technique of wit.

1. It is called college commencement, because the

¹Freud. l. c., p. 50.

students then commence to forget what they have hitherto learned.

2. If the play is good and the star is rotten,
The author's famous, but the star forgotten.
If the star is good and the play is rotten,
The author gets something, the star gets nothin'!

—(*Collier's Irrational Weekly*)

The second example may recall the group of "manifold application of the same material," but in this case, as can readily be seen, the double meaning plays no part. The important factors in these examples depend on the formation of new and unexpected identities, and on the production of ideas and definitions related to each other and to a common third. It is a unification. Unification is also the basis of the quick repartee in wit, for ready repartee consists in using the defense for aggression, and in "turning the tables," or "in paying with the same coin"; that is, the repartee consists in establishing an unexpected identity between attack and counter-attack. This is well illustrated in the following examples.

A lawyer of small stature came into court to look after his client's interests. His opponent, not knowing him, asked him what he wanted, and, on being told who he was, jokingly remarked, "What? Such a little lawyer? Why I could put you into my pocket!" "You could," tranquilly responded the former, "but then you would have more brains in your pocket than in your head."

On returning to Paris after crossing Niagara Falls, Blondin was the hero of the hour. Alexander Dumas, who was one of his many visitors, permitted himself to doubt the feat, upon which Blondin angrily exclaimed, "Well, M. Dumas, if you like, come and walk with me over the Falls." "With pleasure," retorted the celebrated author, "but only on condition that I be allowed to carry you."

The excellent repartee in the last anecdote which meets an impossible demand with just as impossible a condition, contains another technical moment which would be absent if the answer had been, "No, I fear you will not be able to carry me." To illustrate this point I will again quote an example from Freud.

Frederick the Great heard of a clergyman who had the reputation of communicating with spirits. He sent for him and received him with the following question, "Can you call up ghosts?" The answer was, "At your pleasure, your Majesty, but they won't come." Here it is quite obvious that the wit lies in the substitution for the only answer possible, "No," its opposite. To complete this substitution, "but" had to be added to "yes" which gives the equivalent for "No."

Such representation through the opposite is another form of technique of wit. A very pure example of this form is the following:

"This woman resembles the Venus de Milo in many points; like her she is extraordinarily old, and has no teeth, and like her she has white spots on the yellow surface of her body" (Heine). Heine thus depicts ugliness by making it agree with the most beautiful.

The following anecdote will serve as another illustration of this group. The great orator, Cicero, once remarked to a man who told him that his wife was thirty years old, "That is undoubtedly true, since I have heard it for the last ten years." What Cicero really meant was, "This cannot be true, as I heard you say the same thing ten years ago." He said just the opposite, however, "that is undoubtedly true," and if the next sentence had read, "for I have heard you say this before," it would have merely reinforced the first. Instead it reads, "For I have heard you say this for the last ten years"; that is, he carries the reinforcement too far and thus indicated the opposite of what is expressed in the first part. Cicero thus succeeds in making himself plain by saying the opposite of what he thinks. But this opposite is nothing but a very striking "outdoing," which forms another group in the technique of wit.

Mrs. A.: "Can you recommend your former servant? Does she understand everything well?" Mrs. B.: "Oh, yes, she understands everything even better."

This is a very simple example of "outdoing" wit. Instead of saying, "No," Mrs. B. says "Yes," and reinforces it with a still stronger affirmative, which, however, thus gives the equivalent for "No."

Besides the technique of expression through the opposite, wit is also produced by expression through the similar and cognate, or rather through the homogeneous and coherent. The following story illustrates this group.

An Irishman who was expected to die was visited at the same time by his priest and physician. After they had both performed their functions the dying man turned to the doctor and asked, "Doctor, how much will you charge my wife for your services after I'll be gone?" The doctor was somewhat reluctant to answer, but on being urged he said, "I will ask her for \$100." Turning to the priest the Irishman asked the same question, and as he was very insistent the priest answered that he, too, would charge \$100 for his services. The Irishman paused for awhile and said, "Doctor, will you please take hold of my right arm, and Father, will you please take hold of my left arm." When they complied with his request he lay back and said, "Now, I can die like the Lord."

The Irishman's remark is quite plain; we deal with a statement which could not be directly expressed. The indirect expression in this story was produced in the following manner. The remark, "Now I can die like the Lord," suggested that being between the priest and the doctor recalls the Saviour dying between the two thieves. This involves the suggestion that the speaker, too, is between two thieves. What he really wished to say was, "You are two robbers to charge my wife \$100 each." This thought expressed by means of association and in a manner designated as allusion. This witticism is also an excellent example of the so-called grim humor (Galgenhumor).

There are other forms of the technique of wit, but we have described, if only briefly, the most common and most important technical means. These will help us to judge the psychic mechanism and indicate the way for the future solutions of the problem. As mentioned above, the interesting process of condensation with substitution, which we have recognized as the nucleus of the technique of the wit of words, evinces the same mechanism in the formation of dreams. The technique of the wit of thoughts,—such as displacement, false logic, absurdity, indirect representa-

tion, and expression through the opposite,—all these are found also in the technique of dreams. It is displacement that gives the dream its strange appearance and thus prevents us from recognizing in the dream only a continuation of our waking thoughts. The existence of the nonsensical and absurd in the dream is the reason for the belief that there is a deterioration of the psychic activities in the dream, and that the dream shows neither reason nor logic. The popular saying, "Dreams go by contraries," shows well that the idea of expression through the opposite is well known even to the laity. We also find in the dream indirect expressions and the other mechanisms found in wit. All of this shows the close resemblance between the techniques of the dream and of wit, and as will be shown later this resemblance is not at all accidental.

THE TENDENCIES OF WIT

Following the reactions it produces, we divide wit into purposeful, or that which shows definite aims, and harmless, or that which shows no particular aim. It is only the former that is apt to be met with resistances from hearers or persons concerned. There is no relation whatsoever between these classifications and those mentioned above. A harmless joke may be produced by witty words or witty thoughts, and any of the techniques described may serve to produce a purposeful witticism. Following our theoretical explanation of the nature of wit we may say that the harmless wit is for our purposes of greater value than the purposeful, and that the shallow wit is of greater value than the profound. For the harmless and shallow play upon words presents to us the problem of wit in its purest forms, without danger of confusion through the introduction of the tendency factor and consequent false judgment. We often laugh on hearing the most ingenuous and harmless joke where the pleasure experienced cannot have originated from the idea or tendency of the joke; we have then to conclude that the pleasurable feeling is derived from the technique of the wit alone. The technical means of wit, such as condensation, displacement, indirect expression, etc., have the power of producing in the hearer a feeling of pleasure. We cannot, however,

as yet see how they come to possess that power. This gives us a new axiom for the explanation of wit, and brings out more sharply what has been shown above, namely that the character of wit depends on the mode of expression. For it will be recalled that whenever it was possible to reduce the wit by substituting another expression, this not only abrogated the character of the wit, but the laughter-producing effect, that is, the pleasure of the wit. The pleasurable effect of the harmless wit is usually moderate; all that the hearer can expect to obtain from it is a sense of satisfaction and a passing smile; and even this is partially due to the idea. The sudden irresistible outburst of laughter that follows the tendency wit rarely follows the purposeless wit. As the technique is the same in both it may be assumed that by virtue of its tendencies the tendency wit has at its disposal sources of pleasure to which the harmless wit has no access.

Wherever the wit is not harmless it serves two tendencies: it is either a hostile joke serving as aggression, satire, or defense, or it is an obscene joke serving as an exhibition.

To examine the way in which the wit serves these tendencies we will first discuss the obscene or "smutty" joke. By a "smutty" joke we understand the bringing into prominence of sexual facts or relations through speech. However, a lecture on the anatomy of the sexual organs or on the physiology of reproduction need not necessarily have anything in common with the smutty joke. The smutty joke must fulfill the following condition. It must be directed toward a certain person who excites one sexually, and who becomes cognizant of the speaker's excitement by listening to the smutty joke, and thereby in turn becomes sexually excited. Instead of becoming sexually excited the listener may react with shame and embarrassment, which, however, only shows a reaction against the excitement and thus signifies an admission of the same. The smutty joke was originally directed against the woman, and is comparable to an attempt at seduction. If a man tells or listens to smutty jokes in male society it is because the original situation cannot be realized on account of social inhibitions.

The smutty joke is an exhibition directed against a person to whom one is not sexually indifferent. Through the utterance of obscene words the person attacked is incited to picture the parts of the body in question, and is shown that the aggressor pictures the same thing. There is no doubt that the original motive of the smutty joke was the pleasure of seeing the sexual displayed. As shown in the "Three Contributions to the Sexual Theories,"¹ one of the primitive components of our libido is the desire to see the sexual exposed. It is probably only a substitution for the desire to touch the sexual, which is assumed to be the primary pleasure. The libido for looking and touching is found in every person in two forms, active and passive, or masculine and feminine; and in accordance with the preponderance of the sex characteristics it develops preponderately in one or the other direction. At least a certain amount of touching is indispensable in order to attain the normal sexual aim. We all know that touching the skin of the sexual object causes pleasure and excitement. The same holds true of looking, which is analogous to touching. Sexual excitement is frequently awakened by optical impressions, and selection taking account of this fact makes the sexual object a thing of beauty. The covering of the body, which is introduced by civilization, serves to arouse sexual curiosity, and constantly strives to supplement the sexual object by uncovering the hidden parts. This may be turned into the artistic ("sublimation") if the interest be turned from the genitals to the form of the body. The tendency to linger at the intermediary sexual aim by looking is found in most normals. It in a way gives them the capability of directing a certain amount of their libido to a higher artistic aim. But this fondness for looking may become overestimated and fixed, and then becomes a perversion. We then have the so-called voyeurs or "peepers." The desire to exhibit is readily observed in children, and where this desire does not experience the sexual repression it develops into a desire for exhibition, a common perversion in grown-up men. In women the passive desire to exhibit is almost regularly

¹Translated by A. A. Brill, *Journal of Nervous and Mental Diseases*. Monograph series, No. 7.

covered by the marked reaction of sexual modesty; despite this, however, remnants of the desire may always be seen in women's dress.

In a man a great part of this striving to exhibit remains as a part of the libido, and serves to initiate the sexual act. If the striving asserts itself on first meeting the woman it manifests itself in speech, through which the man makes himself known to woman. By having aroused in her pictures the woman herself merges into a corresponding excitement, and is thus forced to passive exhibition. The speech of courtship is not regularly the smutty joke, but may pass over into one. If the woman is yielding there is no need for the smutty wit; it is only resorted to when she is resistive and on the defense. As the sexual aggression is inhibited in its progress toward the act, the sexually inciting speech changes into the smutty wit; and the aggressor, lingering at the evocation of the excitement takes pleasure in the effects his speech produces in the woman. The unyieldingness of the woman is therefore another condition for the determination of the smutty wit. The ideal case for such resistance on the part of the woman usually results from the presence of another man whose presence excludes the immediate yielding of the woman.

The tendency wit usually requires three persons,—the first person who makes the wit, the second person who is taken as the object of the hostile or sexual aggression, and the third person in whom the purpose of the wit to produce pleasure is fulfilled. The process may be described as follows: As soon as the libidinous impulse of the first person meets with resistances to his gratification through the woman, he immediately develops a hostile attitude towards this second person and takes the originally intruding third person as his confederate. Through the obscene speech of the first person the woman is exposed before the third person, who as a listener is fascinated by the easy gratification of his own libido. We can now understand what the wit performs by its tendency. It makes possible the gratification of a craving (lewd or hostile) despite the hindrance which stands in the way; it eludes the hindrance and draws pleasure from a pleasure source which has become inaccessible through

the hindrance. The hindrance in the way is usually nothing but the higher degree of social cultivation which correspondingly increases the inability of the woman to tolerate the bare sexual. The power which renders it difficult or impossible for the woman, and in a lesser degree for the man, to enjoy unveiled obscenities we call "repression." It is the same psychic process which keeps from consciousness whole complexes of emotions and ideas, and has shown itself to be the principal factor in the causation of the psychoneuroses. Civilization and the higher education have helped in the development of this repression, and have produced many changes in our psychic organization. What was once perceived as pleasurable now appears as unacceptable, and is rejected by all the psychic forces. Owing to the repression brought about by civilization many primary pleasures are now disapproved by the censor and lost. But the human psyche finds renunciation difficult, and hence we find that the tendency wit gives us the means to make the renunciation retrogressive, and thus regains what has been lost. When we laugh over a delicate obscene witticism we laugh at the same thing which causes laughter in the ill-bred man when he hears a coarse, obscene joke. The pleasure in both cases comes from the same source. The coarse, obscene joke could not, however, incite us to laughter, because it would cause us shame or appear to us disgusting; we can laugh only when wit comes to our aid.

We have now demonstrated what was said at the outset, namely, that the tendency wit has access to other sources of pleasure than the harmless wit, in which all pleasure depends on the technique. We are, however, in no position to distinguish in the tendency wit what part of the pleasure originates from the technique and what part from the tendency. Strictly speaking, we do not know over what we are laughing.

When we examine the role of the wit in the service of the hostile tendency we at once meet with similar conditions. Since our individual childhood and the childhood of human civilization our hostile impulses towards our fellowbeings, like our sexual strivings, have been subjected to restrictions and repressions. Even to-day we are not yet ready to love

our enemies and to extend to them our left cheek after we are smitten on the right. Nevertheless, we have made some progress in controlling our hostile feelings. Higher civilization and culture trains us to suppress the hostile disposition; we are taught that it is undignified to use insulting language, and even the means of combat have been markedly restricted. Society as the third person in the combat, for the protection of its own interest, prevents us from expressing our hostile feelings in action; and hence, as in the sexual aggression, there has developed a new technique of invective, the aim of which is to enlist the third person against our enemy. By belittling and humbling our enemy, by scorning and ridiculing him, we indirectly obtain the pleasure of his defeat through the laughter of the third person, the passive spectator.

The wit of hostile aggression gives us the means to make our enemy ridiculous, which, on account of the existing hindrances, could not be effected in any other way; in other words, the wit affords us the means of surmounting the restrictions and of opening the otherwise inaccessible pleasure sources. Because of the gain in pleasure it fascinates the hearer to take our part, even if he is not convinced,—just as we are wont to overestimate the substance of the witty remark when we are fascinated by its technique. By way of illustration the following example, taken from the *Catholic Columbian*, may be cited: Wendell Phillips, according to the recent biography by Dr. Lorenzo Sears, was, on one occasion, lecturing in Ohio, and while on a railroad journey going to keep one of his appointments, he met in the car a number of clergymen returning from some sort of convention. One of the ministers felt called upon to approach Mr. Phillips, and asked him, "Are you Mr. Phillips?" "I am, sir." "Are you trying to free the niggers?" "Yes, sir; I am an abolitionist." "Well, why do you preach your doctrines up here? Why don't you go over into Kentucky?" "Excuse me, are you a preacher?" "I am, sir." "Are you trying to save souls from hell?" "Yes, sir, that's my business." "Well, why don't you go there?" The assailant hurried into the smoker amid a roar of unsanctified laughter. This anecdote nicely illustrates the tendency wit

in the service of hostile aggression. The minister's behavior was offensive and irritating, yet Wendell Phillips as a man of culture could not defend himself in the same manner as a common ill-bred person would have done, and as his inner feelings must have prompted him to do. The only alternative under the circumstances would have been to take the affront in silence, had not wit showed him the way, and enabled him by the technical means of unification to turn the tables on his assailant. He not only belittled him and turned him into ridicule, but by his clever retort, "Well, why don't you go there?" fascinated the other clergymen, and thus brought them to his side. The anecdote of the two lawyers mentioned above shows the same mechanism.

We have now shown that the pleasure found in wit is produced on the one hand by the technique, and on the other hand by the tendency. We will next endeavor to discover the common source uniting both.

THE PLEASURE MECHANISM AND PSYCHOGENESIS OF WIT

In endeavoring to discover how the pleasure results from the technique and the tendency of wit, and the mechanism of this resulting pleasure, we find that the explanation sought for can be more readily discovered in the tendency than in the harmless wit. That the pleasure in the tendency wit results from the gratification of a tendency, which gratification would otherwise not take place, is quite obvious. But the manner in which the wit produces this gratification depends on special determinations. There are two different cases to be considered. The simpler of the two is the case in which an outer hindrance stands in the way of the gratification of the tendency. This may be illustrated by the following example: "How many members are there in your council of ten?" Louis XIV once sarcastically asked the ambassador of the republic of Venice. "Forty, your Majesty," retorted the polite Italian. The wit in this case serves to return one affront for another. The ambassador could not answer as he would have liked, because Louis XIV could not be insulted, so he skilfully made use of the unification wit, and thus paid him in his own coin.

The second class comprises cases in which interan-

hindrances stand in the way of the direct realization of the tendency. As examples we may cite the answer of the lawyer to his opponent, and Wendell Phillips's answer to the clergyman. Wendell Phillips was prevented from using invectives by a highly developed esthetic sense, but wit helped to overcome the inner resistances and to remove the inhibitions. The gratification of the tendency is made possible, and in this way the suppression and the "psychic damming" connected with it is evaded. The mechanism of the development of pleasure is the same in both cases. The only difference between the cases of outer and inner hindrances consists in the fact that in the one an already existing inhibition is removed, while in the other the formation of a new inhibition is evaded. We may add that the formation as well as the retention of a psychic inhibition necessitates a "psychic expenditure." If pleasure is obtained in the employment of both kinds of the tendency wit, it may readily be assumed *that such resultant pleasure corresponds to the economy of psychic expenditure.*

Again we are confronted with the principle of *economy* first noticed in the technique of the wit of words; but whereas the economy was there confined to the use of few or possibly the same words, it seems here to comprise the economy of psychic expenditure in general. The secret of the pleasure secured through the tendency wit seems to be in the economy of the expenditure of inhibition or suppression. We shall now turn to the mechanism of the pleasure of the harmless wit.

In examining appropriate examples of harmless wit we concluded that the source of pleasure lies solely in the technique of the wit. Let us now see whether this pleasure can be traced to an economy of psychic expenditure.

The technique of one group of this wit, the play upon words, consisted in directing the psychic focus on the sound instead of on the sense of the word, which greatly facilitated the psychic labor. It is known that in abnormal mental states where the possibility of concentrating psychic expenditure on one place is reduced, the word sounds are more prominent than their significance, and that such patients react with "outer" instead of "inner" associations. Chil-

dren, who still treat the word as an object, show a tendency to seek the same sense under the same or similar wording. This provides no small amount of amusement for grown-ups. If wit gives us pleasure by employing the same or similar words in order to reach from one idea to another, we can justly say that this pleasure is due to the economy of psychic expenditure.

A second group of technical means of wit — unification, accordance, manifold application, modification of familiar idioms, allusions and citations — all these evince one common character: namely, one always discovers something familiar when one expects instead something new. To discover the familiar is pleasurable. It is not difficult to recognize such pleasure as one of economy and to refer it to the economy of psychic expenditure. That recognition of the familiar causes pleasure is universally admitted. We know also that the source of pleasure in rhyme, alliteration, refrain, and other forms of repetition of similar sounding words in poetry, is due merely to the discovery of the familiar.

It may be thought at first sight that the third group in the technique of wit, viz., wit of thought, which includes misplacement, false logic, absurdity, representation through the opposite, etc., bears no relation to the technique of discovering the familiar, but it will not be difficult to demonstrate that this group, too, shows an economy or facilitation of psychic expenditure. It is quite obvious that it is easier to turn away from a definite trend of thought than to stick to it; it is easier to mix up different things than to distinguish them; and it is particularly easier to pass over illogical conclusions. Moreover, in connecting words or thoughts it is especially easy to overlook the fact that such connections should result in sense. These mechanisms are well known and are those especially used in the techniques of the wit mentioned above. It will sound strange, however, to assert that such processes in the work of wit may produce pleasure.

Though "pleasure and nonsense" is almost absent in our serious existence it can still be demonstrated in two cases. It is visible in the learning child, and in the adult under toxic influences. When the child learns to have command

over its mother tongue it takes pleasure in playing with words. It disregards the meaning of the words and connects them in order to obtain pleasure through rhythm and rhyme. An excellent example of this is the familiar "Mother Goose." As the child becomes older it is forced to abandon this pleasure and to employ the words in their senseful meaning. But even later in life there is a tendency to overstep the restrictions in the use of words, and adults often change words by adding suffixes and prefixes and reduplications. This is especially seen in the neologisms of the insane. The child makes use of play in order to withdraw from the pressure of critical reason which is imposed upon it in the course of development. The restrictions appear still greater when in the education of right thinking it becomes necessary to separate reality from fiction. As a persistent resistance against these restrictions we may mention the formation of fancies. The force of reason becomes so strong in later childhood and puberty that the child then rarely dares to utter nonsense. But men are untiring pleasure seekers and find it extremely difficult to renounce pleasure once experienced. The tendency to skylarking in students is nothing but a demonstration against the tyranny of forced study and reality, which they tolerate only impatiently. No one can fail to recognize in our college cries and songs the nonsensical and infantile play with words. These feelings are especially enhanced by alcoholic indulgence under which influence the grown-up again becomes a child. He derives pleasure from a free disposal of his mental stream which is now unencumbered by the restraint of logic.

In reviewing the three groups of the technique of wit it has been shown that the technique of the absurd corresponds to a source of pleasure; and that this pleasure is produced by the economy of psychic expenditure, and by the relief from the restraint of reason. When we traced the psychogenesis of wit we found that the first step in wit is play. The child plays when it learns to use words and connect thoughts, and this playing is probably the result of an impulse which urges the child to exercise its capacities (Groos). Through the repetition of similarities, the re-

discovering of the familiar, and sound associations, it obtains pleasure which may be explained as an unexpected economy of psychic expenditure. But this playing is later brought to an end by reason which rejects it as senseless or absurd. It is only accidentally that the grown-up finds pleasure in the rediscovering of the familiar. This only occurs when he is in a playful mood, which, as in the child, removes the critical inhibitions. But as men do not like to wait for these propitious occasions, and also hate to forego this pleasure, they seek means to make themselves independent of these pleasant states. This effort to evade reason and find a substitute for the pleasant mood produces the second element of wit, the jest.

The object of the jest is to bring about the resultant pleasure of playing, and at the same time appease the protesting reason which strives to suppress the pleasant feeling. The only way to accomplish this is to give sense and meaning to the senseless and absurd combination of words or thoughts. The whole process of wit production is therefore directed towards the discovery of word and thought constellations which fulfil these conditions. The jest makes use of almost all the technical means of wit. The most conspicuous factor of the jest is the gratification it affords by making possible that which reason forbids. Its object is to remove inner inhibitions and thereby to render productive those pleasure sources which have become inaccessible.

If we follow the development of the jest until it reaches its height in the tendency wit we find that the jest's effort is to produce pleasure and that it is content when its utterance does not appear perfectly senseless or insipid. If this utterance is substantial and valuable it changes into wit. When we hear a good witticism we experience a general feeling of satisfaction without being able to tell at once what part of the pleasure comes from the witty form, and what part from the excellent thought. We really do not know what gives us the pleasure and at what we are laughing. This uncertainty of our judgment may have given the motive for the formation of the wit in the literal sense. The thought seeks the disguise of wit, because through the wit it recommends itself to our attention and can appear to us

more important and valuable than it is, but above all because this disguise fascinates and confuses our reason. We are apt to attribute to the thought the pleasure derived from the witty form, and we are not inclined to consider improper what gives us pleasure, and in this way to close up a source of pleasure. For if the wit makes us laugh it is because it establishes in us a disposition unfavorable to reason and conducive to play. To accomplish this the wit had to exert all its effort. Although such wit is harmless, and not purposeful, we can assume that strictly speaking the jest alone shows no tendency, that is, it serves to produce pleasure only. Wit, on the other hand, is never purposeless, as the great tendencies and impulses of our psychic life use it for their purposes. We have shown above the part played by wit in satisfying the hostile and obscene impulses; the hostile wit changes the original indifferent hearers into haters and scorners, and thus confronts the enemy with an army of opponents where there was formerly but one. The obscene wit makes a confederate of the third person, who originally disturbed the sexual situation, by giving him pleasure through the utterance which causes the woman to be ashamed in his presence. In the first case wit overthrows the critical judgment which would have otherwise examined the dispute in question, while in the second case it overcomes the inhibitions of shame and decorum by the pleasure premium which it offers.

What impressed us most on first reviewing the processes of the tendency wit was the effect it produced on the hearer. It is more important, however, to understand the effect produced by wit on the psychic life of the person who makes it, or, to be more precise, in the person who conceives it.

In regard to its distribution we may study the psychic processes of wit in reference to two persons, the wit producer and the hearer. We can at present assume that the psychic process aroused by wit in the hearer is usually an imitation of the psychic processes of the wit producer. The outer inhibitions which are overcome in the hearer correspond to the inner inhibitions of the wit producer. Of the different forms of the inner inhibitions one especially merits con-

sideration. We designate that form by the name of "repression," and it is characterized by the fact that it excludes from consciousness certain former emotions and their products. Tendency wit is capable of liberating pleasure from sources which have undergone repression. If the overcoming of outer hindrances can be traced to inner inhibitions and repressions we may say that the tendency wit proves more clearly than any other developmental stage of wit that the main character of wit-making is to set free pleasure by removing inhibitions. The tendency wit reinforces the tendencies which it serves by bringing to them assistance from repressed emotions, or it serves directly the repressed tendencies. Although we may readily assert that these are the functions of the tendency wit, we must also admit that we cannot understand in what manner these actions can succeed. This is a rather complicated process which we will attempt to demonstrate synthetically.

According to G. Th. Fechner, a meeting of pleasurable conditions will produce a resultant pleasure greater than the sum of the pleasure values of the separate conditions. The result is greater than the sum total of the single effects. The theme of wit does not give us the opportunity to test the correctness of this principle. But from wit we have learned something else which at least comes near this principle. We have shown above that in a co-operation of many pleasure-producing factors we are in no position to assign to each one the resultant part which really belongs to it. But the situation assumed in the principle of assistance can be varied, and for these new conditions we can formulate the following questions and answers: What happens if in one constellation there is a meeting of pleasurable and of painful conditions? Upon what depends the result and the previous indications of the same? The tendency wit particularly shows these possibilities. There is one tendency which strives to liberate pleasure from a certain source, while there is another which works against this pleasurable development, that is, which inhibits or suppresses it. The suppressing stream, as the result shows, must be somewhat stronger than the one suppressed, and is therefore not abolished. But now there appears a second tendency which would

strive to set free pleasure by the same process though from a different source; it thus acts like the suppressed one. What can be the result? This will be better illustrated by an example. There is a tendency to insult a certain person, but against this there is a feeling of decorum and esthetic culture. If by virtue of some emotional state the insult should happen to break through, it would subsequently be painfully perceived. The insult is therefore omitted. There is a possibility, however, of making good wit from the words or thoughts which would have served in the insult, that is, pleasure can be set free from other sources without being hindered by the same suppression. But the second development of pleasure would have to be omitted if the insulting were not admitted, and as the latter is admitted it is connected with the new liberation of pleasure. Experience with the tendency wit shows that under such circumstances the suppressed tendency can become so strengthened by the help of the wit-pleasure as to overcome the otherwise stronger inhibition. But the satisfaction thus obtained is not produced by the wit alone; it is incomparably greater, in fact it is by so much greater than the pleasure of the wit that we must assume that the former suppressed tendency has succeeded in breaking through, perhaps without an outlet. Under these conditions the tendency wit causes the most prolific laughter. Hence we see that the case of the tendency wit is a special case of the principle of help. A possibility of the development of pleasure enters into a situation in which another possibility of pleasure is hindered so that this alone would not result in pleasure. The result is a development of pleasure which is greater by far than the entering possibility. The latter acted, as it were, as an alluring premium, and with the aid of a small sum of pleasure a very large sum is obtained. The pleasure serving to liberate the large sum of pleasure is designated as fore-pleasure (*Vorlust*), and the principle is designated as the principle of fore-pleasure.

The effect of the tendency wit can be formulated as follows: It enters into the service of tendencies in order to produce new pleasure by removing suppressions and repressions. This it does by means of the wit pleasure as fore-

pleasure. When we review its development we find that it begins as play in order to produce pleasure from the free use of words and thoughts. When the growing reason forbids this senseless play with words and thoughts it turns to the jest or joke in order to hold on to these pleasure sources, and in order to be able to gain new pleasure from the liberation of the absurd. As harmless wit it assists thoughts and enforces them against the impugment of critical judgment. In this it makes use of the principle of confounding the pleasure sources. It finally enters into the great struggling suppressed tendencies in order to remove inner inhibitions in accordance with the principle of fore-pleasure. It combats in turn the reason—the critical judgment—and the repression. It firmly adheres to the original word pleasure sources, and opens new pleasure sources by removing inhibitions. The pleasure which it produces, be it play-pleasure or removal-pleasure, can at all time be traced to the economy of psychic expenditure.

THE MOTIVES OF WIT AND WIT AS A SOCIAL PROCESS

Although the desire to gain pleasure is clearly a sufficient motive of wit, there are other motives which may participate in its production. Though wit-making is an excellent means of obtaining pleasure from the psychic processes, we know that not all persons are equally able to make use of it. Wit making is not at the disposal of everybody; indeed few persons seem to possess this gift. It is entirely independent of intelligence, phantasy, memory, etc. A special talent or psychic determination permitting or favoring wit making must be presupposed in all wits. It is not often possible to investigate this theme; only now and then can we enter into the subjective determinations in the mind of the wit maker. The physician indeed occasionally has opportunity to study persons who, if not renowned wits, are recognized in their circle as witty; and he is often surprised to find such persons showing dissociated personalities and a predisposition to nervous affection. Owing, however, to insufficient investigations this cannot be put down as a general rule. A clearer case is afforded by jokes of Jewish subject-matter,

and made exclusively by Jews. The determination for the self-participation seems to be plain. It is due to the fact that the person finds it difficult to directly express his criticism and aggression, and is thus compelled to resort to byways. Jewish jokes not produced by Jews never rise above the level of the comical strain or the brutal mockery. The motive for the production of harmless wit is usually the ambitious impulse "to show off," or give a favorable impression. It is an impulse comparable to the sexual exhibition. The existence of numerous inhibited impulses, the suppression of which retains a certain degree of liability, produces a state favorable for the production of the tendency wit. Certain components of the sexual constitution may appear as motives for wit formation. Persons inclined to obscene joking usually conceal a desire to exhibit. Persons having a powerful sadistic component in their sexuality, which is more or less inhibited, are most successful with the tendency wit of aggression. It is universally known that no person is satisfied with making wit for himself. Wit making is inseparably connected with the desire to impart it. To impart the comical to another person is pleasurable, but one can enjoy it alone, while wit must be imparted. Apparently the psychic process of wit formation does not end with the conception of the wit. There is something left which strives to complete the mysterious process of wit formation by imparting it. The wit producer is in need of another person to whom the wit may be imparted. Wit is thus a social process. Due to the wit making, the person who makes the wit does not laugh at his own wit, but he causes inhibitions to become superfluous in the hearer and thus cause a discharge of the repression of the hearer through laughter. The hearer may be said to laugh with the amount of psychic energy which is set free by the suspension of inhibitions; that is, he laughs away, as it were, this amount of psychic energy. When we laugh at a joke we really do not know what we are laughing at; this can be ascertained only by analysis. Laughing is the result of an automatic process and is possible only in the absence of conscious attention. It is the property of wit to exert its full effect on the hearer only when it is new and surprising to him. This

property, which causes wit to be short lived, and forever urges the production of new wit, is apparently due to the fact that it is in the nature of the surprising and the unexpected not to succeed a second time. When we repeat wit the awakened memory leads the attention to the first hearing. This also explains the desire to impart wit to others who have not heard it before, for the impression made by wit on the new hearer replenishes in the wit maker that part of the pleasure which has been lost by the lack of novelty. An analogous motive probably urges the wit producer to impart his wit to others.

THE RELATION OF THE WIT TO THE DREAM AND TO THE UNCONSCIOUS

It is to be regretted that we cannot here enter fully into the psychological mechanisms of the dream, which are so essential to illustrate the similar mechanisms of wit. Those who are unacquainted with Freud's *Traumdeutung*¹ are therefore referred to papers on the subject by Dr. S. Ferenczi,² Dr. E. Jones,³ and the present writer.⁴ We may, however, attempt to show some of the profounder relations between the dream and wit.

Besides the resemblances in the techniques of the wit and the dream,—condensation, displacement, etc.,—we also find that the formation of wit is similar to the formation of dreams; that is, *a fore-conscious thought is left for a moment to the unconscious elaboration and its results is forthwith grasped by the conscious perception*. Like the dream, the wit is an involuntary mental occurrence. One cannot tell a moment before what joke he is going to crack. One usually experiences something indefinable which Professor Freud compares to an *absence* or sudden suspension of intellectual tension, and the wit then appears suddenly. Brevity, too, is common to both wit and dreams. In both this is the result of the process of condensation. The thought which merges into

¹Deuticke, Wien, 1911.

²The Psychoanalysis of Dreams, Amer. Jour. Psychol., April, 1911.

³Freud's Theory of Dreams, Amer. Jour. Psychol., April, 1910.

⁴Dreams and Their Relation to the Neuroses, New York Med. Jour., April 23, 1910.

the unconscious for the purpose of forming the wit seeks there the infantile play with words, for the infantile is the source of the unconscious. The thought is put back for a moment into the infantile stage in order to regain possession of the childish pleasure forces. As has already been demonstrated in the psychology of the neuroses the peculiar elaboration of wit is only an infantile type of thinking. The dream, also, wherein the child with all its impulses continues to live, has its origin in the infantile life.

Besides the many resemblances between the dream and wit we can also discover some differences. The most important difference lies in their social behavior. The dream is a perfect social psychic product; having originated in a person as a compromise between struggling psychic streams, it remains incomprehensible to the person himself, and has no interest or information for anybody else. Wit, on the other hand, is the most social of all the psychic functions aiming to gain pleasure; it often requires three persons, and the psychic process which it incites always requires the participation of at least one other person. The dream is a hidden wish, while the wit is a developed play. Despite all its apparent unreality the dream retains its relation to the important practical interests of life; it seeks to fulfil the needs through a regressive detour of hallucinations, and it owes its existence to the strong need for sleep during the night. The wit, on the other hand, seeks to draw a small amount of pleasure from the free activities of our psychic apparatus, and to seize this pleasure as an incidental gain. It thus secondarily reaches to important functions relative to the outer world. The dream serves preponderately to guard from pain, while wit serves to acquire pleasure, but all our psychic activities meet in these two aims.

THE WIT AND THE COMIC

Comic differs from wit in its social behavior. The comic is content with only two persons, one who finds the comical and one in whom it is found. A third person to whom the comical may be imparted reinforces the comic process, but adds nothing new to it. In wit the third person is indispensable for the protection of the pleasure-bearing process,

while the second person may be omitted, especially when we do not deal with tendency and aggressive wit. Wit is made, while the comical is found. The comic is usually found first in persons, and later by transference it may be seen also in objects, situations, etc. We also know that wit occasionally reopens inaccessible sources of the comic, and that the comic often serves to wit as a façade to replace the fore-pleasure. That form of comic which is nearest to wit is the naive or ingenuous. The naive, like the comic, is usually found and not made. It must result without our intervention from the speech and actions of other persons, and it can only be produced by persons who have no inhibitions to overcome. What conditions the function of the naive is the fact that we are aware that the person does not possess this inhibition; otherwise we should not call it naive, but impudent, and instead of laughing we should be indignant. The effect of the naive, which is irresistible, seems easy to understand. The inhibition which is usually formed in us suddenly becomes inapplicable when we hear the naive, and is discharged through laughing. As the removal of the inhibition is direct, and not the result of an incited operation, there is no need for a suspension of attention. We behave like the hearer in wit, to whom the economy of inhibition is given without any effort on his part. The naive is mostly found in children in whom no inhibitions are developed, and in uneducated adults, whom we consider as children in reference to their intellectual development. The following examples will serve as illustrations.

Little Boy: "I want the doctor to come to our house."
Servant: "Where do you come from?" Little Boy:
"Don't you know me? Why, we do business with you; we had a baby from here last week."

Said a farmer: "I understand that they make instruments with which the stars and planets can be examined. That I know is possible; but how the learned men discovered the names of the stars and planets,—that I cannot understand."

The examples of naiveté do not apparently differ from wit in either structure or technique. It is merely a question whether the speaker intends to be witty, or whether, owing

to his uncorrected ignorance, he is serious or means precisely what he says. In the latter case we deal with the naive. The naive agrees with wit in both structures and content, but the psychic process of the first person or producer, which is so interesting in wit, is here entirely absent. The ingenuous person imagines that he is using his thoughts and expressions in a simple and normal manner; he has no other purpose in view, and receives no pleasure from his naive productions. Thus the little boy believed that children are obtained from the doctor, and the farmer actually thought that every star and planet comes into existence with a definite name, which men of science have a way of discovering. All the characters of the naive lie in the conception of the hearer, who corresponds to the third person of the wit. The producing person creates the naive without any effort. The complicated technique which in wit serves to paralyze the inhibition produced by the critical reason does not exist here, because the person does not yet possess this inhibition, and he can therefore readily produce the senseless and the obscene without any compromise.

We have said above that the effective determination of wit consists in the fact that both persons should be subjected to about the same inhibition or inner resistances; we may say now that the determination of the naive consists in the fact that one person should have inhibitions which the other lacks. It is the person provided with inhibitions who understands the naive, and it is he alone who gains the pleasure produced by the naive. This, as we know, is due to the removal of inhibitions. But in order to recognize the naive we have to be cognizant of the fact that there are no inner inhibitions in the producing persons. It is only when this is assured that we laugh, instead of being indignant. We take into consideration the psychic state of the producing person; we imagine ourselves in the same, and endeavor to understand it by comparing it to our own psychic state. This putting ourselves into the psychic state of the producing person and comparing it with our own results in an economy of expenditure which we discharge through laughing. This strange mechanism is perhaps the essential part of the psychic process of the comic. Looking at it from this viewpoint the

naive is a form of the comic. The pleasure produced by the naive is "comical" pleasure. It originates through an economy of expenditure by comparing the utterances of some one else with our own. The comical, therefore, results as an unintentional discovery in the social relations of men. It is found in persons, that is, in their movements, shapes, actions, etc., and sometimes also in animals and inanimate objects.

The comical can be removed from the person in whom it is found if the condition under which a person becomes comical can be recognized. This shows that there is a comical situation into which any person can place himself or others to appear comical. The means which can effect this are: transference into comic situations, imitation, disguise, unmasking, caricature, parody, travesty, etc. As can be seen, the sphere of origin for the comic is considerably broader than that of the naive. In order to trace the determination of the comic we will examine the comic movement.

We laugh at the actions of clowns because they appear to us immoderate and inappropriate, that is, we really laugh over the excessive expenditure. The child's motions do not appear to us comical even if it jumps and fidgets, but it is comical to see a little boy follow with his tongue the movements of his pen when he is trying to master the art of writing. We see in this additional motion a superfluous expenditure of energy which we should save under similar conditions. In the same way we find it comical to see a marked exaggeration of expressive motions in adults. Thus we laugh at grimaces which exaggerate the normal expressions of emotions, even if they are involuntary, as in chorea and tics. We laugh because we compare the motions observed in others with those which we ourselves should produce if we were in their place. That person appears to us comical who puts forth too much expenditure in his physical functions and too little in his psychic. Our laughing in both cases expresses a pleasant feeling of superiority which we attribute to ourselves when we compare ourselves with him. This is one of the most important factors in the genesis of the comic.

The difference between the comic and wit is found in

the chief psychological character of the comic. The pleasure source of wit we have found in the unconscious, but there is no reason for the same localization of the comic. On the contrary, all the analyses point to the fact that the source of the comical pleasure is the comparison of two expenditures which we must attribute to the fore-conscious. The main difference between wit and comic is found in the psychic localization; wit is, so to say, the contribution to the comic from the sphere of the unconscious.

Without entering into the details of other forms of the comic we will briefly discuss humor. Humor is the means of obtaining pleasure despite existing painful effects. If we are in a situation which causes us to liberate painful effects, and motives then urge us to suppress the same in statu nascendi, we have the conditions for humor. Thus persons afflicted with misfortune, pain, etc., can gain humoristic pleasure while the onlookers laugh over the comical pleasure. The pleasure of humor results at the cost of this discontinued liberation of affect; it originates through an economy of emotional expenditure. Humor does not require the participation of another person; one can enjoy the pleasure of humor without feeling the necessity of imparting it to another. To understand the psychological mechanisms of humoristic pleasure it is best to examine the so-called "grim humor" (Galgenshumor), where we regularly find that humor is produced at the cost of a great expenditure of psychic work. Economy of sympathy is one of the most frequent causes of humoristic pleasure. Mark Twain's humor usually shows this mechanism.

Humor stands nearer to the comic than wit. Like the comic it is located in the fore-conscious, whereas wit is formed as a compromise between the unconscious and fore-conscious.

We have now shown that the pleasure of wit originates from an economy of expenditure in inhibition, of the comic from an economy of expenditure in thought, and of humor from an economy of expenditure in feeling. All three activities of our psychic apparatus derive pleasure from economy. They all strive to bring back from the psychic activity a pleasure which has been lost in the development

of this activity; for the euphoria which we are thus striving to obtain is nothing but the state of a bygone time in which we were wont to defray our psychic work with slight expenditure. It is the state of our childhood in which we did not know the comic, were incapable of wit, and did not need humor to make us happy.

ABSTRACTS

VISUAL DISTURBANCES OF NERVOUS ORIGIN. (Ueber Sehstörungen nevosen Ursprunges. Dismegalopsie und Störungen im Zusammenhange mit Hyperästhesie der Retina.) By *Carl Liebscher*. *Monatschr. f. Psychiat. u. Neurol.*, Bb. xxviii, Ergänzungsheft, August, 1910. S. 147-166.

This clinical and physiologic study by Liebscher is a short but technical and carefully made treatise largely on dysmegalopsia (seeing things too large, etc.) and that form of visual disturbance, even more rarely met with, in which objects really stationary appear to the patient to be in vibratory movement.

In addition to the more or less similar cases described by Pick, O. Fischer, K. Krause, Heveroch, and Janet, the author in great and interesting detail relates the history of a case of his own from September, 1907, to July, 1909, containing features that are new to neurology. Besides the more frequent symptoms of a typical involution, melancholia, this patient (a man of sixty-two) exhibited for study a set of visual disturbances, evidently on an hysterical basis, which Liebscher notes under six heads, in brief form, thus: (1) The seeing of all objects visible to him in space, in vibratory movement. (2) A micropsia, in which persons and things appear to the patient to be smaller than really they are; occasionally there was with this a degree of macrographia. (3) The upper half of the patient's cane, e.g., appeared to him as if broken. (4) There was a peculiar distortion of symmetrical figures and bodies, such that one half seems greater to the patient than the other half—for example, one half of a person seems swollen, etc. (5) There was an impossibility of rightly comparing two adjacent lines; of two matches laid side by side one seemed longer than the other. (6) There was a strongly unpleasant sensation in the relationship of seen objects to himself, they appearing to be against his very eyes, or even "as if glued to them." Conditions 2, 4, and 5 comprise what O. Fischer has described under the term dysmegalopsia.

The author discusses at considerable length the interesting physiologic differences between the apparent vibratory movement in which were the objects seen by his patient and the phenomena of nystagmus, and finds the two in clear opposition. In nystagmus there is shaking of the eyeball, but in this condition the eye "is in absolute rest"; in the one case, in spite of the lateral movements of the eyeball, no vibratory disturbance is seen in the objects in

space, while to this patient's seeing there is continually vibration in the objects before him. We have here, obviously, an inversion, in a sense, of the conditions of nystagmus. He accounts for the facts observed in his patient by supposing a repeated stimulation from the retina by the image of the object made upon it. This over-stimulation he well assumes is due to a *hyperesthesia of the retina*. This presumption seems to be corroborated in general by the well-known phenomena of dazzling, as, for example, by a light too bright. This explanation is made still more likely by the curious experiences related by the patient (noted in many cases) that objects and persons appeared to be most unpleasantly glued, as it were, to his eyes, so that he sometimes reflexly ducked backwards his head to avoid them.

There follows in the article a most interesting discussion of the optical conditions of locating objects in space, which, however, cannot well be summarized. This explanation strikes a physiologist as according too much importance in this respect to the retina, and far too little to the kinesthetic functions of vision, for the latter certainly are the more important in this (the spatial) phase of seeing.

"All nervous disturbances of vision," says Liebscher, "can be arranged in the same scheme. On this basis we divide them as transcortical, cortical, and subcortical derangements of sight. We separate the dysmegaloptic disturbances into those that are cortical and those that are transcortical. It is the service of O. Fischer to have first pointed out these differences. To these two kinds of nervous disorders of vision I may now add a third, a subcortical form of sight-derangement which can come, for example, from hyperesthesia of the retina." In the cortical and transcortical disturbances there arise errors as to the size of objects, while in the subcortical variety there is either an apparent (false) movement of objects or else an apparent displacement in space, or, as in this case, both at once.

Obviously these criteria may be useful in several ways for diagnosis. The whole article is an excellent example of good observation, sound learning, and useful induction.

GEORGE V. N. DEARBORN.

THE ORIGIN OF HYSTERICAL AND PSEUDO-HYSTERICAL SYMPTOMS. ILLUSTRATIVE CASES. By *Tom A. Williams, M.B., C.M.*, (Edin.), Washington, D. C. Amer. Jour. Med. Science, Sept. 1910.

MODERN pathology has taught us to look beyond the obvious apparent cause to which our predecessors so naively attributed

the symptoms of disease: For example, it has now known that the cold or chill which was supposed to be the cause of pneumonia is really itself a product of the bacterial invasion; it is entirely analogous to the chills of malaria. The like may be said of the sensation of cold in the ear, which sometimes precedes a facial paralysis. Sensation of cold is nothing but the sign of the invasion of the nerve trunk, now known to contain sensory fibers, by the infective or toxic agent which causes the paralysis.

Mere observation of a symptom is inadequate for its elucidation until we have studied its genesis and evolution. This has been strikingly illustrated in the advance of the science of psychiatry by the labors of Kraepelin, who has shown that the old categories of mania, melancholia, catonia, etc., are mere episodes in the course of psychoses which may present them each in turn.

The following cases and considerations based thereon will, I hope, make it clear that the "stratum" method powerfully elucidates our understanding of the psycho-neuroses, and show the added power given by such understanding.

Case 1. A girl was brought to Babinski, having become monoplegic upon receiving an electric shock while crossing a tramway line. This seemed like paralysis not caused by suggestion, but after the symptoms had been removed by persuasion, further inquiry elicited the fact that the patient had overheard some months previously a conversation between some electricians who were speaking of the dangers arising from electric shocks of the above description. It is evident that upon experiencing the shock there had flashed into the patient's mind a datum learned from the conversation she had overheard and apparently forgotten, and that this memory furnished the suggestion at the base of the palsy she developed.

It is easy to see that the foregoing case shows symptoms derived purely from ideas implanted in the mind, from a submerged memory. The next case illustrates the direct production of symptoms by unskillful suggestions made by the doctor in examining: The first was related by Brissaud during the famous discussion on hysteria at the Paris Neurological Society, in 1907. It was that of a man whom Dupinet had examined after an injury at work. The patient was not anesthetic. Not being contented with the examination, another expert was called in, and he by his want of skill in examination created an anesthesia before the very eyes of Dupinet, who was a spectator.

Equally demonstrative is the case related by Babinski, in which the family doctor declared, "My first examination revealed no anesthesia; on the second occasion I elicited after much care

an anesthesia of the foot, which later extended up the lower limb." Inquiry showed that the solicitude of the patient's father led him to constantly ask the patient about the feeling in his lower limbs.

The role of direct medical suggestion is very clear in these cases, and its fortifications by injudicious family sympathy is shown in the latter case. This mechanism plays a large part in the induction of the so-called traumatic neurosis; which is nothing more than an idea of disability induced by suggestion and fixed by reiteration. In mechanism it differs in no way from the idea which is the basis of the psychic gastropathy, the commonest form of "nervous" indigestion. Both of these affections are hysterical, and are amenable to psychotherapy.

Case 4. Hysterical hemiplegia. A young married woman whose appendages had been removed some years before, at which time she had right hemiplegia and aphasia, believed to be syphilitic. She had completely recovered until a few days before I saw her.

There was complete anesthesia and flaccid paralysis of the right side. There was no hemianopsia, ataxia, or tremor, which excluded a thalamic lesion. The patient could be made to sit up, during which act the abdominal and pelvic muscles contracted co-ordinately, which they could not have done in so complete an organic paralysis. The tendon jerks were not exaggerated; the abdominal reflex was not diminished, and the great toe did not extend when the sole was stroked. There was no hypotonia, and both platysmæ contracted on forcible depression of the chin. Synergic associated movements were absent, and there was no complication of facial, ocular, or articulatory muscles. When palsied arm or leg were suddenly let go, there were contractions of the antagonist muscles.

The syndrome had occurred after a contrariety, and was quickly removed by the suggestion of gradually re-educating the movements. Four days later the patient shook hands and could walk, in accordance with my expressed expectation; and the patient was then fully apprised of the fact that her paralysis had arisen merely from the idea that she could neither feel nor move the right side. The discussion is too long to detail here.

Case 5. After an attack of influenza a woman returning in a crowded car from a shopping expedition began to feel much oppressed and in want of air. The heart, enfeebled by the influenza poison, and we know not what others, taken as medicaments and aliments, ceased to respond to the call upon it for a more rapid flow of blood, so that aeration could be sufficient, and a faint ensued, with the psychic accompaniments of irresistible terror and dread of dissolution. Never since has this woman been able to

bring herself to go alone into a car; the very idea of doing so induces the fear of fainting. She is not obsessed by the idea so long as the question of entering a car does not arise; but although she knows her conduct to be unreasonable, she cannot bring herself to act reasonably about going alone into a car.

DISCUSSION OF THESE CASES.—Now the method of solicitude and sympathy merely reinforces the patient's belief in the validity of the idea for which sympathy is an implicit acquiescence. Still more injurious is direct medical treatment of the apparent physical disorder, which results from ideas. For instance, a hysterical monoplegia (i.e. a paralysis of one limb induced by the patient's belief that it is disabled) should not be treated by the application of electricity or massage to that limb, nor by the giving of an internal remedy which the patient is led to suppose is capable of removing such conditions. It is very bad practice (p. 13), too, to pretend to perform surgical operations to cure imaginary disease. This only reinforces the patient's notion that some physical state was the cause of her disability. Its true treatment is that directed to the mind, a reversal of the patient's false belief. Psychotherapy is the means to be used in many cases exclusively.

In describing the cases the author wishes to confine himself to the essentials, and that only in so far as to convey a clear picture of what should be understood by hysteria, and to differentiate it from mythomaniac, psychasthenic, and neurasthenic pseudo-hysteria. Thus, heredity, family history, patient's previous history, and elaborate physical examination are not discussed, and the therapeutics is only indicated incidentally.

The criterion of hysteria adopted is that of Babinski, undue suggestibility; and the following are the other cases discussed.

I. Hysteria with anesthesia, dreamy states, choleric impulses. The pathogenesis revealed by psychoanalysis of dreams and in hypnosis. Treatment by persuasion and instruction.

II. Mythomaniac mydriasis.

III. Spiritism and possession (Grasset). Discussion of his diagnosis of hysteria, and of his theory of the subconscious based on the polygon.

IV. Stimulated hysteria and amnesia with mental debility, in a criminal. Methods of detection. Source of the symptoms. Discussion of simulation and mythomania and their relation to the hysterical constitution.

V. Relation of emotionalism and hysteria. Differentiation from psychasthenia. The psychasthenic convulsion. Cases of tic. Relation to dromomania and dipsomania. Relation to neuras-

thenia, which is not a psychic disorder. Pseudo-neurasthenia by suggestion.

AUTHOR'S ABSTRACT.

THE CHANGE OF LIFE IN MAN (CLIMACTERIUM VIRILE). By Kurt Mendel. Neurol. Centralblatt, Vol. 29, No. 20.

IN 1831 Halford called attention to the neuro-psychic manifestations of the climacterium in men, which occurs between the ages of fifty and seventy-five. Freud also showed that anxiety neurosis in men is usually frequent at the time of the decline of sexual powers. Recently Church contributed to our knowledge of the climacterium in men, and indeed we find considerable literature on this subject: Sanctorius, Campbell, Stevenson, Nelson, (monthly pollutions); Church (monthly epilepsy and migraine); Hall, Mosher, Gall, Chopart (monthly hematuria); Havelock, Ellis (monthly cardiac asthma); Flies and Swoboda. Campbell reports a case of a man who had every four weeks hemorrhoidal hemorrhages for twenty or thirty years; they occurred so regularly that he spoke of his "monthlies." When at sixty these periods became irregular, he grew nervous; with the establishment of the regularity of the course, the nervous symptoms disappeared.

For the past ten years the author has made a special study of the nervous symptoms of the climacterium in men and has collected thirty cases. He believes that the symptoms of this clinical display are closely related to regressive alteration of the generative organs and come under a distinct nosological entity, *climacterium virile*.

Symptomatology

The symptoms of *climacterium virile* become manifest between forty-seven and fifty-seven, more frequently between fifty and fifty-four. There is a definite feeling of anxiety — "everything goes on so slowly I can never reach my aim," so the patients often declare. They complain of general weakness and become emotionally depressed and cry readily, "I am like a woman, so soft — everything brings tears." In his cases congestion of the head, sudden heat flushes, anxiety attacks with perspiration, occasional cardiac palpitation, angina pectoris, general exhaustion, poor sleep or insomnia were observed. These symptoms are quite characteristic in *molima climacteria* in women.

The bodily manifestations, which were quite often, if not constant, found in his patients, resemble those in the female. We may

briefly allude to them: vertiginous attacks; headaches, especially in form of intracranial pressure; pains and paresthesias (head hot and feet cold) of various parts of the body. The disturbed nocturnal sleep corresponds with the morbid drowsiness during the day. In woman's climacterium, in addition to angioneurotic disturbances, psychic symptoms are quite often observed; especially heightened irritability and capriciousness; disinclination for work or amusement; tendency to melancholic or hypochondriac moods; metaphysical mania; enfeeblement of memory and intellectual activities and loss of interest in the environment. Similar psychotic manifestations are common in men; they complain of poor memory, especially for recent happenings and names; they become indifferent and dull; they have no interest in political affairs, read no newspapers, and grow introspective and worry about their sickness and their families; and they fear they would never recover and be able to resume their occupations. They are moody, irritable, and evince no interest in pleasures of life (at times give expression to suicidal ideas); become misanthropically inclined, grow more or less inactive and maintain a retiring and seclusive attitude. They attach themselves to the physician with childlike dependence and are grateful for his word of solace. Ethical defects, ideas of self-reproach, ideas of reference, ideas of jealousy or hallucinations were not present in his cases. It is especially important to note patient's sexual powers. Glaeveke states that in eighty per cent of his cases, who were all female, sexual desire was almost extinguished after the removal of the ovaries — artificial menopause — and in seventy per cent sexual sensations during intercourse were markedly diminished. In natural climacterium in women the diminution of the libido is considered normal, however, after the menopause the sexual feeling may persist for years; sometimes, according to Lowenfield, during the climacteric period sexual feeling may be increased. V. Gyurkovechky maintains that from forty the sexual powers decline and they continue till sixty-five. In Mendel's patients, at the time of the malady the libido was reduced and gradually became extinct; however, after disappearance of the symptoms, the libido recurred, but not as strong as formerly. Only few patients complained about the infrequency of erection and the ejaculations during coitus. Most of the patients, until the development of the symptoms, practised normal sexual intercourse, all of them were married and had children.

From the somatic point of view there were no neurological signs. Pupils reacted to light and accommodation; knee jerks were active; speech was good; and there was no thyroid en-

largement. Nutrition was good — most of them were well developed and quite obese. There was only one case of diabetes. No arteriosclerotic manifestations. Intelligence was intact.

Course and Prognosis

The disease commences between the ages of forty-seven and fifty-seven, and is of gradual development. Remissions are quite often. The entire duration is between ten months and four years, average between one and one half years and three years. Oft-times they feel worse at night and others do in the morning. In most cases recovery is complete, but the sexual powers become reduced. The prognosis in most of the cases is very good. In many instances recovery is not complete, in that some neurasthenic residuals remain in the foreground.

Differential Diagnosis

Mendel makes a complete differential diagnosis. He excludes dementia precox, general paralysis, senile dementia, paranoid states, and manic-depressive insanity. He states that this peculiar symptom-complex is common to arteriosclerotic insanity, but in his cases no arteriosclerosis could be demonstrated, as he puts "*arteriosclerosis cerebri sine arteriosclerosis*. [One must bear in mind that arteriosclerosis is a selective process; while it is true sclerotic changes cannot be elicited in the peripheral vessels, yet one cannot positively exclude changes in cerebral arteries. Not infrequently one finds cerebral arteriosclerosis post mortem, while *intra vitam* the peripheral system was free from sclerotic alterations.—REVIEWER.]

Pathogenesis and Pathological Anatomy

Climacterium virile, or better expressed, *molimina climacteriæ viri*, is a disease picture which results from internal secretory disturbances, brought about by regressive alterations and hypofunction of reproductive glands.

Indirect Causes

The fundamental disorder lies in the hypofunction of the reproductive organs, nevertheless there are certain exciting causes which precipitate this malady, viz.: excitement, worry, overwork, alcoholism, nicotine, trauma, and infectious diseases.

Treatment

The author has had no experience with spermin. Pine needle baths and carbon dioxide baths are very good. Bromides

and bromides with iodides and opium are beneficial in anxiety states. Galvanic current to the head, electric douches, bodily faradization and air baths are to be recommended. The patients should be encouraged to take outdoor exercise, to make journeys and live in mountainous or sea climate. By all means they should give up their occupations. The diet should be regulated; alcoholic beverages are contraindicated and all forms of excitement should be avoided. The psycho-therapeutic treatment consists in explaining to the patient his own condition and mild suggestions.

MORRIS J. KARPAS.

THE USE OF THE ASSOCIATION EXPERIMENT IN THE PROGNOSIS OF TRAUMATIC NEUROSES. *By Carl Potozky. Tegel. Monatschrift f. Psychiatrie u. Neurologie, Band. xxv, heft. 6.*

THE two cases of traumatic neuroses studied by the author happened to be in the hospital at the same time and had, besides, the following striking resemblances. Both met with railroad accidents at almost the same time; both were injured in the occipital region; and both complained of the same symptoms, viz., severe headaches, weakness of memory, dullness as well as crepuscular states of a poriomanic nature. Both continually complained of their condition which absorbed all their attention. Their manner of complaining even showed a striking resemblance. The objective relations were almost the same in both. They were both young, they possessed the same degree of education, and followed the same technical profession. Moreover, they were not rich, but had a good income which they lost on account of their long illness. Both sought to be indemnified for their injuries. The author applied Jung's association method and expected to find the same results, but contrary to his expectations the association types belonged to two opposite types. The answers obtained from A. were of the egocentric type, dealing mostly with his person and his suffering, but they evinced also a certain amount of humiliation recalling an epileptiform state. The reaction times were generally prolonged, but the reactions were more prompt in emotionally accentuated words. All his thoughts were centered on his incapacity and his prospect for indemnity. The answers obtained from B. were of the extreme objective type. The reaction times were throughout strikingly prolonged and pointed to a very marked exhaustive verging on a complete breakdown. The author concludes that the prognosis for the recovery in A. is distinctly favorable and depends on the monetary compensation for his trouble, whereas in B. the prognosis is unfavorable and does not depend

on the monetary compensation. The paper is well written and nicely shows the importance of Jung's association methods in psychopathology.

A. A. BRILL.

A PSYCHOLOGICAL ANALYSIS OF DEMENTIA PRÆCOX. *By Dr. W. Stockmayer.* Tübingen. Zentralblatt f. Nervenheilkunde und Psychiatrie, No. 295.

Stockmayer gives an excellent analysis of a case of dementia præcox which he worked up during his stay in the psychiatric clinic of Zurich. It was the case of a twenty-six-year old girl who suffered from an acute psychosis showing all the typical symptoms of dementia præcox. The author started with the Jung's association experiment, and then analyzed the complexes found by Freud's psychoanalytic method. The incomprehensible hallucinations as well as the other mechanisms of the psychosis were thus thoroughly uncovered and fully explained. The case is exceedingly interesting, but should be read in the original, as no justice can be done to it in a short review.

A. A. BRILL.

REVIEWS

FREUD'S NEUROSENLEHRE. NACH IHREM GEGENWARTIGEN STANDE ZUSAMMENFASSEND DARGESTELLT. *By Ed. Hitschmann.* Pp. 156. (Deuticke, Vienna, 1911.)

IN this little volume Dr. Hitschmann attempts the difficult task of presenting a connected account of Freud's theory of the neuroses in the present stage of its development. As, however, it is impossible to keep this theme wholly apart from the allied developments of the same train of thought, he has shortly but clearly described these as well. The titles of the chapters are: (1) Introduction; (2) General Theory of the Neuroses; (3) The Actual Neuroses; (4) The Sexual Impulse; (5) The Unconscious; (6) Dreams; (7) Hysteria; (8) The Compulsion-neurosis; (9) The Psychoanalytic Method of Investigation and Treatment; (10) General Prophylaxis of the Neuroses; (11) Other Applications of Psychoanalysis; (12) Chronological List of Freud's Writings.

Dr. Hitschmann is to be congratulated on the accurate and faithful way in which he has carried out his purpose. There is no better mode of approaching the subject of psychoanalysis than to read this book through carefully as an introduction to Freud's own writings. The latter are pretty closely adhered to throughout, and an excellent synopsis of them is achieved. The English translation, which is being prepared, should be very welcome.

ERNEST JONES.

DIE SPRACHE DES TRAUMES. EINE DARSTELLUNG DER SYMBOLIK UND DEUTUNG DES TRAUMES IN IHREN BEZIEHUNGEN ZUR KRANKEN UND GESUNDEN SEELE FÜR ARZTE UND PSYCHOLOGEN. *By Wm. Stekel.* Pp. 539. (Bergmann, Wiesbaden, 1911.)

THIS book is a striking illustration of the extensiveness of modern work on dream problems. It is almost wholly taken up with a very condensed presentation of the practical interpretation of dream symbolisms, which is only one of the problems relating to dreams; in spite of this its size is such that, if the printing were of the usual kind, it would occupy quite a thousand pages of an ordinary book. The work is based on a remarkable experience, for Dr. Stekel states that he has analyzed over ten thousand dreams; some six hundred of these are related here. It is commonly urged against Freudian theories that they are based on too little evidence. ("Freud has formulated wide-reaching generalizations

from a comparatively *small number of facts*." (JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. V, p. 353.) When a little time ago I ventured to point out that the evidence on which Freud's theory of dreams was established was really very extensive (although I considerably underestimated the actual amount of it), I was taken to task with the answer that even if it was ten times as extensive "it would not necessarily strengthen in any way the hypotheses advanced." Our critics seem hard to satisfy; an objection which they consider formidable becomes irrelevant in their eyes as soon as it is refuted.

As to the present book, like so many of Stekel's writings, it is quite unsuitable for any one who is not already familiar with psychoanalysis. The steps in the analyses are for the most part omitted, and the interpretations are simply and abruptly presented. It therefore gives a very untrue picture of actual psychoanalysis. For Freudians, however, who do not need to have the A B C of the underlying principles explained on every occasion, it has a very considerable value. Stekel is one of the cleverest and most penetrating interpreters of symbolism, and, although the boldness and freedom of his interpretations shock many beginners, I can only say for my part that the great majority of them have been confirmed by my own experience. All this is far from admitting that the whole of Stekel's work is accepted by the Freud school — there are indeed parts of the present book, e.g., that on telepathic dreams, with which, so far as I know, no other member of the school would agree. Taken altogether, the book is one which will prove of great value, but in a limited field.

ERNEST JONES.

SOCIETIES

AMERICAN PSYCHOANALYTIC ASSOCIATION

At a meeting held at Baltimore, on May 9, 1911, it was decided to found an American Psychoanalytic Association. Meetings are to be held once a year. They may be attended by members of any local society, but only those who have given evidence of a competent knowledge of the subject will be eligible to membership of the Association. The Association has been affiliated as a branch of the International Psychoanalytic Association. The following officers were elected: *President*, Dr. J. J. Putnam, 106 Marlborough Street, Boston; *Secretary*, Dr. Ernest Jones, 407 Brunswick Avenue, Toronto; *Council*, Dr. Trigant Burrow, Baltimore; Dr. August Hoch, New York; Dr. Adolf Meyer, Baltimore.

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THE NATURE OF SLEEP*

BY ISADOR H. CORIAT, M.D., BOSTON, MASS.

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I. THE NATURE OF THE PROBLEM

IN the course of psychopathological work I have noticed that when subjects were placed in a reclining position, with the eyes closed, in a darkened room, and were requested to listen to a monotonous sound stimulus, that the depth of drowsiness produced was parallel, not with the monotony or duration of the stimulus, nor with the exhaustion of the stimulus, but with the degree of muscular

*(Read in abstract before the American Psychopathological Association at Baltimore, Md., May 10, 1911)

relaxation. The question then arose, is sleep caused by monotonous stimuli or by an actual diminution of the stimuli pouring into consciousness, such as occurs in a quiet, relaxed position and with the eyes closed? This psychological attitude towards the problem of sleep seemed so promising that the following investigations were begun, in the hope that data would be secured which would help to emancipate the mechanism of sleep from such vague generalities as cerebral anemia, carbonic acid gas poisoning, or retraction of the dendrites.

Sleep is one of the greatest mysteries of our psychic life. The very multiplicity of the theories which have been propounded to explain the mechanism of sleep show their inadequacy, at least for a final solution of the problem. However, the more recent biological and physiological interpretations have in a measure cleared the way for a fairly satisfactory if not a final solution. Any theory of sleep must be based upon sound physiological data, because sleep is a physiological phenomenon occurring in everyday life, and not a manifestation of a disease process. In interpreting sleep as a pathological phenomenon, the older theories signally failed. Sleep is a function of living matter and is necessary for all living beings, at least for those organisms which possess a central nervous system, no matter how rudimentary. The periods of immobility or rest which are observed in the lower organisms are also undoubtedly conditions strongly allied to sleep, and seem to be the conditions from which sleep phylogenetically arose.

When we come to discuss the question as to how the sleeping man differs from the waking man, we must study the state of the nervous system with all its complex reflexes during sleep. It is therefore to the nervous system, particularly the brain, that attention must be directed in any attempt to solve the problem of sleep. The various theories that have been propounded to explain sleep have all had for their central theme the physical condition of the nervous system. It has been observed, on the contrary, that unicellular organisms which do not possess any nerve elements show neither rest nor repose even when observed for hours at a time. Their movements seem to be perpetual. The

mechanism by which some plants close their leaves and petals in darkness and open them in either natural or artificial light is not sleep, but probably a mere biochemical phenomenon, allied to atropism. The winter sleep of hibernating animals is a lethargic state and is probably due to the diminished secretory activity of a special gland or some other disorder of metabolism of the body tissues.

Sleep is a biological reaction of defense of the organism against fatigue, and the primary psychical condition of sleep, although not the cause of it, is disinterest and inattention. In deep sleep there is an absolute repose of the brain, while, on the contrary, in deep hypnosis, the condition which outwardly most resembles sleep, the brain is exceedingly active, because hypnotized subjects can calculate, associate, and store up memories. Experiments on the loss of sleep in animals and in human subjects show how necessary is the reparative power of sleep for conscious beings. In animals which have been starved to death, but few changes can be found in the brain, while in animals which died of enforced insomnia, the most profound and irreparable changes occurred, such as capillary hemorrhages and fatty alterations in the nerve cells.¹ Whether or not fatigue is necessary for the production of sleep will be considered later in the course of my experiments.

Since sleep is dependent upon the brain, the theories of sleep have been chiefly directed towards changes in this organ, either circulatory, secretory, chemical, particularly the presence or absence of oxygen, the ameboid movements of the glia or the nerve cells, the reaction of the brain to external stimuli, the intensity of consciousness, and finally the inhibition of cerebral function. To a consideration of these theories attention will be briefly directed. My experiments were performed on a series of human subjects, in whom I could check my procedures and have the advantage of introspective evidence, a thing manifestly impossible in animals. The animal experiments were undertaken merely

¹For experiments on the loss of sleep in man, see Patrick and Gilbert, *Psychological Review*, Sept., 1896. For similar experiments on animals, with the pathological findings, see Marie de Manaccine, "Quelques observations Experimentales sur l'influence de l'insomnie absolue." *Arch. Ital. de Biologie*, XXI. 1894.

to establish the nature of motionless states in animals in order to determine whether these were genuine sleep, hypnosis, or states of cerebral inhibition.

II. SOME MODERN THEORIES OF SLEEP

The physiological theories of sleep relate principally to the circulation of the blood in the central nervous system and to the hypothesis that there is a central organ of sleep, or rather, that a certain portion of the brain presides over sleep. According to this latter theory, when this portion of the brain is active we are awake, when its activity is lessened or inhibited the organism sleeps.

The pioneer experiments in which accurate observation was used, on the circulation of the blood in the human brain in both waking and sleeping state, were made by Mosso.¹ He made his observations on natural and artificial sleep (this latter induced by chloral hydrate) on subjects whose skulls had been trephined for injuries, thus exposing the brain. He showed that sleep was due to changes in the cerebral circulation. In passing from the waking state into sleep there occurs a dilatation and a relaxation of the vessels of the skin, while the act of waking is always accompanied by a contraction of the blood vessels of the skin. Thus during sleep, for mechanical reasons alone, the brain contains less blood than in the waking condition. A sound, a voice, or a touch, modifies the amount of blood in the brain of the sleeper, and yet the sleeper on being awakened has no memory or consciousness of being affected by these causes. These unconscious changes during sleep have a certain biological, adaptive value in the struggle for existence, because they increase the blood supply to the brain and so awaken the animal when it is in danger.

Tarchanoff² showed that in puppies the brain grows pale when the animals are asleep, and that at the same time the cortex reacts less readily to electrical stimulation. Young dogs sleep better in a horizontal position than with the head low, because this latter induces cerebral hyperemia.

¹Mosso. *Sulla circolazione del Sangue nel Cervello delle' Uomo*, Rome, 1880.

²Tarchanoff. *Observations sur le Sommeil Normal*. Arch. Ital. de Biologie. 1894.

According to Howell¹ sleep is caused by a diminished blood supply to the brain, due to a relaxation of tone in the vasomotor center, thereby producing a general fall of arterial pressure. Thus the immediate cause of sleep lies in a dilatation of the blood vessels of the skin, producing a fall of blood pressure in the arteries at the base of the brain, thus producing an anemic condition of the cortex. The periodicity of sleep is therefore directly connected with a rhythmic loss and resumption of tone in the vasomotor center.

Both Brodman² and Czerny,³ on the contrary, found a moderate cerebral hyperemia during sleep, which they interpreted as purely secondary.

When we pass to theories which interpret sleep as due to the activity of certain portions of the brain, we are in the presence of very unsatisfactory data. Oppenheim⁴ states that sleeplessness is caused by abnormal stimuli entering the brain, principally the thalamus, and that sleep is due to a lack of these stimuli. Borgherini,⁵ has performed some experiments in which he extirpated the cerebellum in dogs. Under these circumstances when the eyes of the animals were bound, there followed complete muscular relaxation of the entire body and then sleep.

Salmon⁶ has recently promulgated an ingenious although unsatisfactory theory of sleep, based upon the functions of the pituitary body. He points out the very marked relation between somnolence and pituitary tumors, and therefore claims that sleep is due to a hypersecretion of the pituitary body and insomnia to a diminished secretion.

The *histological theories of sleep* or the doctrine which explains sleep by the ameboid movements of the dendrites of the nerve cells, seem to be founded upon insufficient ex-

¹W. H. Howell. A Contribution to the Physiology of Sleep, based upon Plethysmographic Experiments. Journal Exp. Medicine, 1897.

²K. Brodman. Untersuchungen ueber das Volumen des Gehirns und Vorderarms in Schläfe. Journ. f. Psychol. U. Neurol. 1902.

³A. Czerny. Zur Kenntniss des physiologischen Schlafes. Jahr. f. Kinder heilkunde, 1896.

⁴Oppenheim. Physiologie des Schlafes. Archiv. f. Physiol., 1902.

⁵A. Borgherini. Schlafähnlicher Zustand bei Thieren denen das kleinhirn entfernt wurde. Neurol. Centralblatt, 1891.

⁶A. Salmon. La Function du Sommeil. Paris, 1910.

perimental evidence. These theories are based principally upon some statements of Cajal, on observations concerning ameboid movements of the processes of nerve cells in transparent animals and the undulatory movements of the distal processes of the olfactory peripheral neurones. Pupin¹, who has utilized this theory to its greatest extent, states that sleep consists of a repose of the nervous centers due to a difficult reception of external stimuli or impressions, these latter being due to an interruption in the continuity of the neurones. In sleep the reflexes are not abolished and therefore there exists merely a difficulty in the passage of stimuli from peripheral to central neuron. This diminished stimulus is due to the ameboid motions of the nerve cells, causing a retraction of the dendrites.

Ramon Y Cajal,² in explaining the mechanism of sleep, claims that the neuroglia and not the dendrites of the nerve cells are possessed of ameboid characters. The pseudopodia of the neuroglia cells intervene between the nerve cells and their protoplasmic branches, so that the passage of nerve stimuli either entirely ceases or is considerably impeded.

The *chemical theories of sleep* ascribe sleep either to (1) an impoverishment of oxygen in the brain; (2) an accumulation of fatigue products in the blood; (3) an accumulation of carbonic acid gas, and (4) the formation of poisonus alkaloids by the tissues, which, acting on the brain, have a fatiguing and narcotic action, and hence produce sleep. In sleep these poisons are no longer formed, because in this condition there exists a minimum of nerve and muscle activity. These toxic substances are eliminated during the night and when elimination is complete or nearly so, awakening results. This cycle of autointoxication of the nervous system is repeated daily. This dependence of nerve action upon the presence of oxygen is also pointed out by Loeb³ and Bethe.⁴

The *psychological and peripheral theories of sleep* are of

¹C. Pupin. *Theorie Histologique du Sommeil*, 1896.

²S. Ramon Y Cajal. *Archiv. f. Anatomie*, 1895.

³Jaques Loeb. *Comparative Physiology of the Brain*, 1903.

⁴A. Bethe. *Die Theorie der Zentrenfunktion. Ergebnisse der Physiologie*, 1906.

great interest. According to these theories, sleep is explained as due to an absence of external stimuli. The waking state is possible only if the organism is subjected to constant stimuli from without, and this, in part at least, is an explanation of our waking consciousness. When these stimuli are absent the animal sleeps. In favor of this hypothesis are the observations on human subjects who have a general cutaneous anesthesia and who fall asleep when sounds are excluded and the eyes are closed.

The earliest and at the same time the soundest observations along this line were established by Heubel.¹ The experiments were performed on animals, principally frogs and birds, and showed that mental activity was dependent in great part on incoming peripheral sensory stimuli. When these are absent, the intensity of consciousness tends to diminish and sleep results. The deeper and more continuous is sleep the more there is muscular relaxation, and this muscular relaxation is constant and characteristic. The chief condition for the production of sleep is the absence of sensory stimuli from the various peripheral, sensory neurones. The following extracts from Heubel's work may be quoted as indicating his exact position.

"Consequently it may be asserted, at least for the frog, that as soon as the animal is placed under conditions, as the result of which the stimuli affecting the brain from the peripheral sensory nerves are removed, the waking brain state cannot continue, but passes into sleep. . . . The brain during sleep loses its capacity for action, and accordingly one may conclude that the brain is dependent for its activity upon external causes of excitement, brought on by the centripetal nerves. The conditions for the production of sleep consists in withdrawing as far as possible from the brain of the animal the causes of excitation which are constantly being carried to it by the sensory nerves. . . . If the external causes of excitation are completely and permanently withdrawn, there appear, especially in birds, unmistakable signs of sleep. Their eyes become tightly and

¹E. Heubel. Ueber die Abhängigkeit des wachen Gehirnzustandes von Aussen Erregungen. Arch. f. d. gesammte Physiologie, 1876.

continuously closed, the respiration becomes regular, often surprisingly slow, and the muscles relax."

Similar phenomena on the production of sleep in man, particularly under certain pathological conditions, have been pointed out by a number of observers. It seems that these experiments stand in the relation to certain motor phenomena in the muscles, which phenomena are a necessary part of all attentive processes.

Strumpell¹ reports the case of a sixteen year old subject, with total anesthesia of the skin to all stimuli, an absence of the muscular sense and of fatigue, no sense of taste or smell, blindness of the left eye and deafness of the right ear. If, in this subject, the right eye was bound and the left ear stopped, the brain was deprived of all stimuli from the external world, and after a few minutes the subject fell tightly asleep.

Raymond² cites a similar case and concludes that the cerebral activity which constitutes the waking state only maintains itself when the brain receives stimuli from without. The complete suppression of these external stimuli brings on a sleepy state closely analogous to natural sleep. Bethe also contends that the central nervous system is kept in a state of activity by the stimuli supplied it from the various organs of the body and that every nervous system is primarily a conduction path, a receptive surface with an efferent organ in combination, a point also insisted on by Sherrington.

The most recent and at the same time the most hopeful tendencies are what may be termed the *psycho-biological theories of sleep*. These theories interpret sleep, not as a disease or the result of chemical changes, but as an essential phenomenon of life. Claparede's³ biological theory of sleep, although unsupported by experimental evidence, is a very ingenious one, and has attracted considerable attention.

¹A. Strumpell. Ein Beitrag Zur Theorie des Schlafes. Archiv. f. ges. Physiologie, 1877. Deut. Archiv. f. Klin. Med., 1878.

²F. Raymond. Anesthesic Cutanea et Musculaire dans ses Rapports avec le Sommeil Provoque. Rev. de Med., 1891.

³E. Claparede. Enquête d'une Théorie Biologique du Sommeil. Archives de Psychologie. Vol. IV.

According to this theory sleep is a negative state, a cessation of all activity, and is a reaction of defense to protect the organism against fatigue, rather than a physiological process the result of fatigue. The function of sleep possesses all the characteristics of an instinct. Sleep consists in an inhibition of attention for the present situation, and is really the active development of disinterest. The phylogenetic origin of sleep is derived from these animals whose activity has been broken by periods of repose and immobility. These animals, according to the laws of natural selection, have thus been favored in the struggle for existence, for they have been enabled after these periods of immobility to manifest in consequence a more intense activity. These periods of immobility were themselves derived from the function of the inhibition of defense, such as the simulation of death, which plays so great a part in the animal kingdom.

The most recent experimental investigation of sleep is by Sidis,¹ who interprets sleep from the standpoint of the threshold of cell energy. Three essentials are necessary for the production of sleep namely monotony of sensory impressions, limitation of voluntary movements of inhibition. Of these the monotony of sensory impressions and the limitations of voluntary movement seem to be the two most important factors, in that they tend to raise the threshold of stimuli. In going to sleep the subject always passes through an intermediary subwaking or hypnoidal state, and this subwaking state is not only present in man, but can also be demonstrated in many of the lower animals. Like Claparede, Sidis also considers sleep from an evolutionary standpoint, as developing from the primitive rest states of the lower animals. When the organism becomes fatigued as a result of continued stimulation, those stimuli which have exhausted themselves or have ceased to act on the organism by means of their monotony, drop out and are replaced by new stimuli, until the whole round of stimuli has been gone through. Then the organism ceases to respond to the stimuli and falls asleep. Organisms therefore sleep when

¹Boris Sidis. *An Experimental Study of Sleep*. JOURNAL ABNORMAL PSYCHOLOGY, 1908.

the threshold for stimulation rises, and awakes when the threshold falls.

Tromner¹ attempts to solve the problem of sleep, but bases his solution upon purely theoretical considerations. He regards sleep as purely a psycho-biological mechanism, and asserts that sleep and hypnosis have much in common. He does not regard fatigue as bearing any relation to sleep, because infants, who do not become fatigued, sleep nearly all the time, and it can be shown the length and depth of sleep do not depend upon exhaustion. Sleep is an active process of instinctive inhibition acting primarily on the sensory functions. He assumes on various theoretical grounds that the optic thalamus is the seat of this instinctive action, which acts as a center to inhibit stimuli and therefore produces sleep.

According to Kronthal,² sleep is purely an objective phenomenon and is the temporary condition of a living organism in which most of the reflexes are set aside or arrested. Sleep is not dependent upon the nerve cells of the brain, because every cell in the body suffers from fatigue, and periodically requires rest or sleep.

When we come to critically consider the various theories of sleep we are at once struck with the fact that sleep for the most part has been considered a pathological phenomenon and not a physiological manifestation of everyday life. For this reason, the circulatory, histological, and chemical theories of sleep will not bear critical inquiry. For instance, we know that there is very little if any parallelism between sleep and fatigue, because sleep is periodic in character, and may be postponed by excitement, interest, and even volition. Sleep is not a manifestation of disease or of self poisoning of the body, but is a natural instinct of the organism. The motionless states in animals produced by sudden peripheral excitations are not sleep, but a form of hypnosis. While Heubel's theory of sleep appears to me to be perfectly sound, yet I feel that he erred in interpreting the motionless states in his animals as genuine sleep. As will

¹E. Tromner. Zur Kritik der Schlaf theorien. *Medizinischkritische Blatt*, 1910.

²P. Kronthal. *Der Schlaf des Andern*, 1907.

be pointed out later, neither monotony of sensory impressions nor limitation of voluntary movements are necessary for sleep. Neither does sleep result from a fatigue of the organism by continued stimulation, but only if the actual stimulus be decreased, either to zero or to the threshold of conscious perception. If a stimulus is present, but just falls short of producing a sensation, then for the organism it is just as if no stimulus existed at all. It has been shown beyond a doubt, however, that sleep does take place when the peripheral sensations are cut off or greatly diminished. Now it is well known, and indeed Bethe has recently pointed it out, that the activity of consciousness is maintained by these sensations, which pour in from the eyes, ears, muscles, and afferent nerves of the skin, and when these are cut off or deduced to a minimum, sleep results. The nervous system merely receives the active energies supplied to it by stimuli of all kinds and is merely a conduction path, connecting peripheral organs with the center — a receptive surface with an afferent organ in combination.¹ The greatest mass of stimuli pouring into the brain, naturally comes from the muscles and it is for this reason that a diminution of muscle tonus either accompanies or precedes the onset of sleep. It is with these peripheral theories of sleep that we are chiefly concerned, and to which end the following experiments were undertaken. Thus the problem of sleep becomes essentially a psycho-biological problem. Claparede has stated that sleep is due to the development of disinterest and inattention. The muscular strain and tonus accompanying attention are well known, and thus again Claparede's ingenious theory confirms our researches on the state of muscular tonus during sleep.

III. EXPERIMENTS ON ANIMALS

The history of the induction of motionless states in animals and their relation to sleep and hypnosis is an interesting one. Experiments of this nature have been performed by a number of investigators. Kircher in the seventeenth century produced the same condition in hens, in his celebrated *experimentum mirabile*.

¹A. Bethe. Die Theorie der Zentren funktion. *Ergeb. der Physiologie*, Bd. V.

Heubel interpreted these motionless conditions in animals as true sleep following on the cessation of external stimuli, and insisted that the condition had nothing to do with fright or fear.

Verworn,¹ who has investigated the entire question very fully, under the title of the so-called hypnosis of animals, states that the motionless states which immediately take place in animals when they are suddenly placed in an abnormal bodily position and held there for a short time, are the result of two components, a tonic irritability of the cerebral centers and an inhibition of the motor areas of the forebrain. According to Verworn, the animal remains lying motionless in the particular position in which it is placed, because the activity of the forebrain is inhibited. We are thus dealing with an inhibition phenomenon. These states observed in animals are not sleep, and while resembling hypnosis yet are different from hypnosis in man. The photographs which accompany Verworn's contributions to the subject, show rigid cataleptic states in the muscles of the animals experimented upon, and not the muscular relaxation of sleep. Briefly, the mechanism of the condition seems to be that a single brief stimulus is thrown into a long continued excitation and this in turn is transmitted to the muscles, altering their tonus and causing a long-continued contraction.

Dearborn² also investigated these motionless states in animals, using the crayfish for his experiments. He was able to produce states of immobility varying from a few seconds to as long as twenty-seven minutes. He believed the mechanism to be the same as hypnosis in the human subject, when the necessary allowance was made in the immense difference between the nervous system of man and the crustacean.

Sidis³ repeated many of these experiments and concluded that the limitation of voluntary movements in animals, a

¹Max Verworn. *Beitrage zur Physiologie des Central nerven system. Die Sogenannte Hypnose der Thiere*, 1898.

²G. V. N. Dearborn. *Notes on the Individual Psychophysiology of the Crayfish. American Journal Physiology. Vol. III, No. 9. April, 1900.*

³Boris Sidis. *Loc. cit.*

condition upon which he lays so much stress in his theory of sleep, is closely analogous to subwaking states, and in many instances is identical with sleep, thus confirming Heubel's theory of years previously. In the lower animals this condition was easy to induce, while in the more highly developed organisms there was considerable opposition to the experimental manipulations. This opposition and struggling was overcome by the use of anesthetics, a most unfortunate modification, as this introduced serious fallacies and produced neither hypnosis nor sleep, but a genuine narcosis. As will be pointed out later, narcosis is an entirely different neural mechanism from that of either sleep or hypnosis.

Preyer interpreted the condition as due to fright, while Danilewski¹ found that the motionless states in animals possessed many of the characteristics of hypnosis in man, such as muscular rigidity, and in some cases severe general anesthesia. He believes that the hypnosis of man has the same phylogenetic basis as in animals, excepting that in the former the mechanism is more complicated, due to the more highly organized nervous system. Both he and Verworn found that when the cerebral hemispheres were removed in a frog, the animal assumed cataleptic postures. They concluded from this, that the element of suggestion cannot enter into these motionless states. Forel² interprets the phenomena as a simple physiological cataleptic state, while Czermak named the condition genuine hypnosis.

Thus several different interpretations have been placed upon these phenomena of motionless states in animals, such as fright, hypnosis (or a condition closely allied to it), and sleep. It was with the purpose of either verifying or disproving these various theories concerning the motionless states in animals, that the following experiments were undertaken.

The experiments are given briefly and are selected from a mass of experimental data. An animal with a very primitive nervous system (crayfish) was first used. Later,

¹Paris, 1890.

²Forel. *Hypnotism and Psychotherapy*, 1907.

animals with a complicated brain were utilized, such as frog and guinea pig.¹

A — Experiments on Crayfish

After several struggles, a crayfish was thrown on its back and the legs and claws were held in a firm, hyper-extended position for about a minute. It was then released and remained absolutely motionless in this position for eleven minutes. It manifested no reaction when an electric light was repeatedly flashed into the eyes. An object placed between the claws was quickly grasped, held for a moment, and then the claws slowly relaxed. During this entire experiment the legs and claws were extremely rigid.

The same experiment was performed with a different creature, excepting that the limbs and claws were held at right angles in a most strained and uncomfortable position. After a few minutes, two of the hyper-extended legs slowly relaxed, fell a little, and again became rigid. The entire body maintained this difficult position for eight minutes.

Another experiment showed the following. After being held on its back in an uncomfortable position for a few seconds there developed a gradual rigidity of the legs and claws, the body half curled up on itself, and some of the limbs became elevated in the air at right angles to the body. The rigidity at the end of five minutes became extreme and was not disturbed by a sudden jarring of the table, except that one claw slowly assumed a still more uncomfortable position. At the end of ten minutes the condition remained the same, and when the animal was suddenly placed in a normal position, it immediately crawled away in a most lively manner.

An animal was suddenly thrown on its back and immediately released, it remained motionless and rigid for a minute.

Another animal after being held on its back in a motionless position for a few seconds, with the legs and claws

¹These experiments on animals were performed in the Physiological Laboratory of Tufts College Medical School, through the kindness of Dr. Dearborn. All the animals used were healthy, adult individuals.

hyper-extended, developed a remarkable spring resistance. It remained in this motionless, rigid position for fifteen minutes, but immediately grasped a piece of wood when this was inserted between the widely opened claws.

An animal was held standing on the tips of its claws and remained absolutely motionless in this strained position for ten minutes, when the experiment was terminated.

During all of the above experiments the limbs and claws were held rigid, but if touched during the rigid, motionless stage of the animal there would follow a slight withdrawal of the stimulated limb, which would immediately become again rigid in its new position.

A large number of experiments were performed, but invariably with the results as detailed above.

B — Experiments on Frogs

A large, lively frog was thrown suddenly on its back and held for a few seconds with the legs and head hyper-extended. It remained in this position for thirty seconds, the eyes widely opened and with rapid respiration. It then quickly resumed its normal posture. The same animal was firmly held on its back for a few seconds, with the head and foreleg hyper-extended and the hind legs curled up in a very uncomfortable position. It remained in this crippled position for one minute and forty seconds and then slowly assumed a normal position.

Another frog was thrown suddenly on its back and became immediately motionless. The hind legs were curled up and the forelegs and head were hyper-extended. The limbs were rigid and if moved or touched they instantly sprang back to their original position, without the slightest evidence of muscular relaxation. Occasionally the animal croaked. It remained motionless for three and one half minutes, the eyes widely opened, the limbs rigid and showed no reaction to sudden jarring of the table or the repeated flashing of an electric light in the eyes.

Another animal was thrown on its back and the body held arched in a semi-circle, with the limbs and head hyper-extended. It immediately became motionless and rigid, and remained in this position for fifteen seconds.

In all of the above experiments and in numerous others which were performed with these animals, the animal was absolutely motionless with extreme rigidity of the limbs and neck.

C — Experiments with Guinea Pigs

A large number of experiments were performed with healthy adult guinea pigs. Sometimes a given experiment would succeed with one animal, on other occasions the experiment would be a failure with the same animal. There were no signs of exhaustion in the same animal after a number of experiments were performed with it — that is, the animal was just as likely to go into a cataleptic condition for the first time at the end of a series as at the beginning. A cataleptic state would always terminate suddenly, the animal always assuming a correct position and becoming as lively as before the experiment was begun. In none of the animals were there any signs of genuine sleep.

In a number of experiments, the animal was firmly held on its back with the legs and head hyper-extended, where it would remain in this position for periods varying from one to three minutes, the eyes staring and the limbs rigid with a violent muscular tremor. In one experiment, this motionless condition persisted for ten minutes.

In all these experiments muscular rigidity and tremor of the limbs were marked. The reflexes when tested were found to be exaggerated, while the eyes were widely open and staring. At first the respiration became rapid and then slowly diminished to normal. In neither the frog nor the guinea pig were there any signs of cutaneous anesthesia during the cataleptic states.

D — Discussion of the Experiments

In analyzing the data given in these experiments on animals, several features stand out prominently. It will be noted that the lower in the phylogenetic state was the animal experimented upon, the easier it became to produce a motionless state. Furthermore, the duration of the state in the crustacean was longer than in those vertebrates which

had a fairly highly differentiated nervous system. In fact, the brain of the crayfish consists merely of two esophageal ganglia connected by an esophageal commissure. The opposition to the induction of the motionless states was greater in the guinea pig than in the frog and greater in the frog than in the crayfish. In fact, the crayfish was easy to manipulate, and prolonged motionless states of muscular rigidity could be easily produced.

In some of the experiments on guinea pigs it was found that the marked opposition and struggling of the animal could be quickly overcome by the administration of a few whiffs of chloroform or ether. When this latter procedure was done, however, an entirely new element was introduced with the experiment, namely, the influence of narcosis. The animal would immediately become limp and relaxed and the eyes would close, an entirely different picture from the staring animal with muscular rigidity, which took place when the anesthetic was omitted.

While the mechanism in the rigid state is that of cerebral inhibition, in the limp state produced by narcosis we are dealing with the chemical effect of a volatile poison upon the lecithan substances of the central nervous system. Ether and chloroform are protoplasmic poisons, and their action upon the brain is purely a depressant one. For instance, it was shown by the experiments of Hans Meyer,¹ that the narcotizing substance enters into a loose physiochemical combination with the important lipoids of the nerve cell, particularly the lecithan bodies, and as a result cell activity becomes inhibited. In dogs that had been subjected to chloroform narcosis, the greatest amount of chloroform was found in the central nervous system. Narcotics interfere with transmission in the nervous system and produces, not muscular rigidity, but muscular relaxation.

These experiments with anesthetics produced so different a condition, that is, neither sleep nor hypnosis, that they were at once rejected as introducing fallacies into the experimental data.

In animals upon which I experimented the most striking

¹The Theory of Narcosis. *Journal Am. Med. Ass'n.* Vol. XLVI, No. 3, 1906. *Experimentalle Pharmakologie*, 1910.

positive features were the immobility of the entire body, tremor of the limbs, rigidity of the limbs, amounting at times to almost a spring resistance to passive manipulation, the widely open and staring eyes, rapid respiration, and the automatic reaction to stimuli. The negative features were an absence of relaxation and closure of the eyes and a slow, regular respiration, in other words, the condition which one would expect to find in genuine sleep. The positive phenomena were the same as found in the hypnosis of human beings, particularly the condition of the muscular tonus. In these experiments, therefore, we are probably dealing, not with the diminished cerebral activity of sleep, but with a condition of increased cerebral inhibition. In fact it has been pointed out by Bethe¹ and Loeb² that in the brainless crayfish the limbs are unceasingly active, either cleaning each other or performing pendulum movements. Bethe concludes from this and other experiments that the brain is an organ of inhibition, and that its action is to inhibit constant muscular activity and to produce states of immobility or rest.

Thus it would seem to follow that these conditions of immobility in my experiments on the crayfish can be explained on the basis of an increased cerebral inhibition, and not the diminished brain activity, as obtains in deep sleep or in the drowsy state preceding sleep. I cannot agree with the hypothesis which states that cerebral inhibition is a reduction of psychic intensity. This inhibition of the brain probably took place through the kinesthetic stimuli of the manipulations being poured into the central nervous system. If we were dealing with an inhibitory mechanism in the crayfish, a like condition also probably took place in the other animals experimented upon.

It is interesting to note, that Claparede³ has also interpreted hypnosis in human beings as an inhibitory function. Hypnosis in human subjects is usually produced by certain auditory or visual stimuli, while in my animal ex-

¹A. Bethe. *Allgemeine Anatomie und Physiologie des Nerven system*, 1903.

²Jacques Loeb. *Comparative Physiology of the Brain*, 1903.

³E. Claparede and W. Baade. *Recherches Experimentales sur quelques Processus Psychiques Simple dans un Cas d'Hypnose*. *Arch. de Psychologie*. Vol. VIII, 1909.

periments, the stimulus used was purely a kinesthetic one.

The rapid induction of the motionless states and the rapid recovery therefrom is a phenomenon which is absent in genuine sleep, as in this latter there is always found a prior or subsequent temporary hypnagogic condition. Also in favor of the argument that these motionless states in animals are the result of cerebral inhibition is the fact, that since in all animal experiments the element of suggestibility could be completely eliminated, the kinesthetic stimuli acted alone, producing the increased inhibition of the central nervous system.

In none of the animals was anything detected which resembled either sleep or a subwaking state. In sleep there is a condition of muscular relaxation, while my animal experiments invariably showed a condition of muscular tension. There was an absolute inhibition of muscular movements and the cataleptic states produced were permanent. The animals, particularly the crayfish, very quickly went into these cataleptic states and would quickly recover and become immediately as lively as before the experiment. These types of motor activities, that is, rapid induction of catalepsy and rapid recovery from catalepsy, are incompatible with the motor phenomena of sleep, which is that of muscular relaxation. It is true, as I have previously pointed out,¹ that catalepsy may occur in the pre-sleeping drowsiness, but here it is transitory, and, furthermore, there was no evidence of this pre-sleeping stage in any of our animal experiments.

The animals would remain in the most unnatural and strained positions for a considerable length of time, without any outward trace of fatigue, at least so far as could be gathered from attempts to assume a more comfortable position. There was no evidence of those conditions of muscular relaxation and repose such as are always found in genuine sleep. The cataleptic state was always quickly induced and remained permanent. Neither could there be observed any transition from catalepsy to relaxation, such as some-

¹Isador H. Coriat. *Nocturnal Paralysis*. Boston Medical and Surgical Journal, July, 1907. *Some further Studies on Nocturnal Paralysis*. Ibid, Dec. 5, 1907.

times occurs in genuine sleep, particularly in the hypnagogic state.

In general it may be stated that these experiments on animals furnish one proof of the distinct difference between sleep and hypnosis. In the human subject there is likewise this distinction, as will be experimentally demonstrated later.

IV. EXPERIMENTS ON HUMAN SUBJECTS

(Muscular Relaxation and Tension, Various Stimuli)

Subject A. Experiment I.—The subject was directed to completely relax all his muscles, with the result that when the limbs were elevated they fell by their own weight. He was then requested to listen intently to a monotonous sound stimulus (the buzz of a faradic battery) and at the end of fifteen minutes he was asleep and did not awaken until lightly touched on the forehead. He then related some vague dreams concerning boats, etc.¹

Experiment II.—Same experiment of complete muscular relaxation, but without listening to a monotonous stimulus. Again sleep and dreaming at the end of about fifteen minutes.

Experiment III.—Listening to a monotonous sound stimulus for fifteen minutes, but with the limbs held moderately rigid, although perfectly quiet. Otherwise the conditions of experiment were same as indicated in I and II. At the end of fifteen minutes, the subject was perfectly alert, without the slightest sign of drowsiness.

Experiment IV.—The same as Experiment III, but without the use of a monotonous sound stimulus. Absolutely no feeling of drowsiness at the end of fifteen minutes.

Experiment V.—Muscular tension of right arm, the remainder of the body completely relaxed. Listening to

¹Nearly all the sleep experiments on human subjects were carried out at night and in a darkened room. Muscular relaxation was secured by directing the subject to lie on a couch or reclining in a large, comfortable chair. In one of the experiments where the capillary electrometer was used, a subject had actually retired for the night. A few experiments were carried out in the morning, in order to study the influence of rest and compare these with the experiments at night, when we would expect a certain amount of fatigue. Although only one record of each experiment is given, yet nearly all were repeated several times.

monotonous sound stimulus for fifteen minutes. Not the slightest sensation of drowsiness resulted.

Experiment VI.—A pair of well-moistened electrodes attached to a faradic battery were tied in the palms of the hands. The subject was directed to relax all the muscles and to listen to a monotonous sound stimulus. At the end of fifteen minutes the subject was soundly sleeping. At the end of this time the current from three cells of the faradic battery was slowly and carefully turned on, but the subject did not awaken until half the current had been switched on.¹

Experiment VII.—Complete muscular relaxation, ears stuffed with cotton. The well-moistened electrodes were tied to the palms of the hands as in the previous experiment, but the conducting cords were led to the battery in another room. The current was then turned on, half the current of two cells being used. This uniform stimulus was kept up for five minutes, during which time the subject remained awake. The current was then diminished to a quarter of its strength for another five minutes, but even then the subject remained awake although drowsy. Then the current was completely switched off, and at the end of five minutes, the subject was soundly sleeping, with slow respiration and complete muscular relaxation. In this experiment as in others of like nature a prearranged signal, striking a bell, either by the subject, if awake, or by the experimenter was used, to indicate the exact moment of the diminution of the current. Further similar experiments gave identical results.

Experiment VIII.—Complete muscular relaxation for fifteen minutes, with the ears stopped with cotton. Monotonous sound stimulus not used. At the end of this time the subject was completely asleep, and on awakening was able to give the following introspective evidence. On three different occasions, he partially awoke out of a vague dream not clearly remembered, but on each of these occasions, there was a transitory complete inability to move the limbs, a genuine nocturnal paralysis. Out of a series of experiments performed with this same subject, this was the only

¹The current in all these cases was measured and regulated by a current controller.

occasion on which nocturnal paralysis appeared, thus making the condition identical with genuine sleep. In this experiment the eyes were closed, the ears stopped with cotton, and the muscles completely relaxed, thus experimentally cutting off a great mass of stimuli for the brain. True sleep resulted, with dreams and nocturnal paralysis.

Experiment IX.—The conditions were identical with Experiment VIII, except that the muscles were held tense. Not the slightest drowsiness or nocturnal paralysis took place.

Experiment X.—Same condition as in Experiment VIII, except that the right arm was held tense. No sleep or subjective sensation of drowsiness.

Subject B. Experiment I.—Complete muscular relaxation and listening to a monotonous sound stimulus. Sound sleep at the end of fifteen minutes.

Experiment II.—Complete muscular relaxation without listening to a monotonous sound stimulus. At the end of fifteen minutes the subject was tightly asleep and on awakening related a number of confused dreams.

Experiment III.—Muscular tension of entire body, without the use of any monotonous sound stimulus. At the end of fifteen minutes there was a sense of fatigue, but no feeling of drowsiness. Introspection demonstrated a constant tendency to muscular relaxation and when this occurred there arose a simultaneous feeling of drowsiness.

Experiment IV.—Complete muscular relaxation for ten minutes, then, at a prearranged signal (bell), a voluntary assuming muscular tension. No monotonous sound stimulus used. During the relaxed period, at the end of three minutes the subject appeared quite drowsy, and after a short time was sound asleep and dreaming. On the stroke of the bell by the experimenter the awakening was sudden, and during the period of muscular tension there was not the slightest feeling of drowsiness.

Experiment V.—General muscular tension for five minutes. Monotonous sound stimulus not used. No drowsiness. Then at a prearranged signal (bell) complete muscular relaxation. Shortly after relaxing the muscles the subject became tightly asleep and remained so for some time.

Experiment VI.—Complete muscular relaxation of entire body, with the exception of muscular tension of right arm. No monotonous sound stimulus used. At the end of some time no sign of sleep or feeling of drowsiness.

Experiment VII.—With the exception of some experiments with the capillary electrometer, this experiment was carried out for a longer period than any others which have been reported. The subject was placed on a couch in a darkened room, in a state of complete muscular relaxation. A faradic apparatus was placed in an adjoining room, and the conducting cords attached to flat and well-moistened electrodes, which were securely fastened to the palms of the subject's hands. The ears were stopped with absorbent cotton, and the eyes closed, thus shutting out all peripheral stimuli except what would come from the faradic current. The results were as follows (two cells used):

For 15 minutes — full current, no sleep.

For 15 minutes — one half strength of current, no sleep.

For 15 minutes — one quarter strength of current, no sleep, but drowsiness.

For 15 minutes — no current, tightly asleep.

In other words, there was no exhaustion of the same stimulus which finally led to sleep, for sleep only occurred when there was an actual lessening or cutting out of the stimulus.

Experiment VIII.—The same experiment was repeated, but for a shorter period. The results were identical as in Experiment VII.

Experiment IX.—Same as in Experiment VIII, with the subject striking a bell as a prearranged signal when the current was completely turned off. The results were the same,—sleep took place only when there was no electrical current.

Subject C. Experiment I.—Completely relaxed and listening to a monotonous sound stimulus for a long period. Perfectly alert, no sleep or drowsiness.

Experiment II.—The same experiment, but without the use of monotonous sound stimulus. The subject became quite drowsy and there were fluctuating periods in which she fell completely asleep for a short time.

Experiment III.—Same as II. Tight asleep at end of fifteen minutes.

Experiment IV.—A moderate degree of muscular tension. Remained completely awake.

Experiment V.—Complete muscular relaxation of limbs, body, head, and neck. Limbs fall by their own weight. Eyes closed. Ears stopped with cotton. The subject became drowsy very quickly and later continued to fluctuate between deep sleep and extreme drowsiness, but at the end of fifteen minutes was sound asleep.

Experiment VI.—Same as Experiment V, but with rigidity of the right arm. Not the slightest drowsiness took place.

The same series of experiments were tried on several other subjects (D. E. F. H. G. I.), with identical results. In none of the subjects, excepting one, did any catalepsy take place, and in this subject it was limited to a slight difficulty in opening the eyelids, after listening to a monotonous sound stimulus for some time, with the body completely relaxed. The catalepsy in this case was probably of the nature of an incomplete nocturnal paralysis, and, moreover, the subject was one who could be very easily hypnotized.

V. EXPERIMENTS WITH HUMAN SUBJECTS

(Capillary Electrometer)

For a number of years the capillary electrometer has been a familiar instrument in physiological laboratories. In 1883, Martius¹ used the instrument to detect muscular tension in strychnine tetanus and also to register the muscle tonus in artificial and natural tetanus. Burch² later pointed out that the instrument can register differences of potential and short interval electrical changes, and about the same time Waller³ demonstrated that the capillary electrometer could be used to register the electromotive changes connected with the beat of the mammalian heart. So far as I am aware,

¹E. Martius. Das Capillar elektrometer. Archiv. f. Anatomie U. Physiol. 1883.

²Burch. Journal of Physiology, 1887.

³A. D. Waller. Cardiac Electromotive Changes. Journal of Physiology, 1887.

however, in the experiments to be detailed, was the first time that the instrument was applied towards an attempt to solve the nature of sleep. As a result of a series of experiments carried out with waking, sleeping, and hypnotized human subjects, it was found that the capillary electrometer registered, and was a delicate index of changes in the surface tension of the body and in muscular tonus. Previous to these experiments the instrument had been used only to measure differences of potential and as an indication of electrical changes following each other at short intervals.

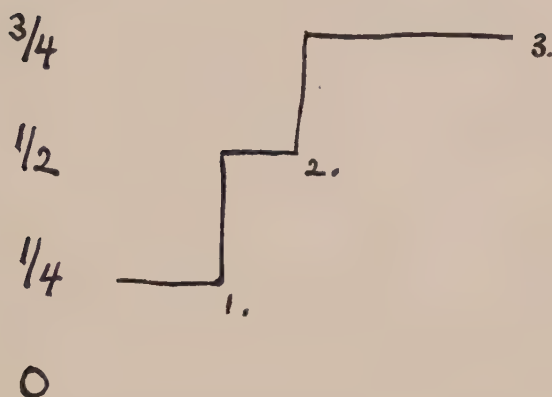
The instrument was an ordinary capillary electrometer. It was used with a microscope with oc. 5mm. obj. — 16mm. Eye-piece length 160 mm. The conducting cords were of such length that the microscope with the attached electrometer could be placed in another room and connected with the subject, the connection being established by the palms of the subject's hands resting on zinc electrodes measuring 22 cm. by 17 cm. Before each experiment the subject's hands were washed with a mixture of alcohol and ether, so as to insure perfect dryness and eliminate as far as possible the action of any oil or sweat. Illumination of the apparatus was secured by an incandescent globe with a green shade, the light being projected through a pale blue glass inserted in the substage of the microscope. These conditions were uniform in every experiment.

The column of mercury was so regulated at the beginning of each experiment so as to be in the greatest diameter of each microscopic field, but only covering one half the diameter. Now under these conditions, if the palms of the hands were allowed to rest lightly on the electrodes, on opening and then closing the short-circuit key of the instrument the column of mercury could be observed to move an appreciable distance back and forth. If the movement was towards the north of the microscopic field it is referred to as positive, if to the south, as a negative movement. For a certain degree of muscular tension the movement of the column of mercury was identical. Changing of the muscular tension likewise caused variations in the excursions of the mercury. This was particularly well demonstrated in waking subjects, as the experimental evidence to be detailed later will show.

As a result of a large series of experiments with waking and sleeping subjects, it was found that in opening and closing the short-circuit key, the mercury column always showed definite movements through a certain space in the microscopic field. These movements were as follows:

- A.—Through a quarter of the field.
- B.—Through one half of the field.
- C.—Through three quarters of the field.
- D.—No movement at all.

The lack of movement always corresponded with a minimum or an absence of muscular tension of the body, or perhaps with such a low degree of tension that it did not sufficiently rise above the threshold to affect the instrument. These movements in the experiments will be designated as three quarter, one half, one quarter, and cipher. Most of these movements were positive variations, except in the pre-sleeping stage of the subject, when the usual movement was negative. Readings were taken only every three or five minutes, as it was found by experience that frequent opening and closing the circuit tended to exhaust the reaction. This exhaustion of reaction, however, was quickly recovered from in the course of one or two minutes. Waking or hypnotized subjects always produced a movement of the mercury column, which remained the same or tended to grow more marked, even after prolonged resting of the hands on the electrodes as the experiment progressed. In drowsy states and the pre-sleeping stage this movement tended to gradually grow less, and became completely absent when the subject was tight asleep. When the subject was awakened or awoke spontaneously the movement of the mercury column was immediately resumed, sometimes to a greater degree than before sleeping took place. The reason for these variations we will see later.



WAKING SUBJECT B

FIGURE I—The fractions represent degrees of movement of the mercury column of the capillary electrometer in quarters of the microscopic field. (Oc. 5mm. Obj: 16 mm. Eyepiece length, 160 mm.) Figures 1, 2 and 3 represent increasing degrees of muscular tension in a waking subject. Note how the movement of the mercury column advances in quarter degrees as the muscular tension increases from 1 to 3.

A—Experiments with Waking Subjects

Experiment I. Subject B.

Palms held loosely on electrodes $\frac{1}{4}$
 Palms held more tightly $\frac{1}{2}$
 Palms held very tightly $\frac{3}{4}$

The same experiment repeated a number of times gave identical results.

Experiment II. Subject M.—Conditions same as in Experiment I. Results the same.

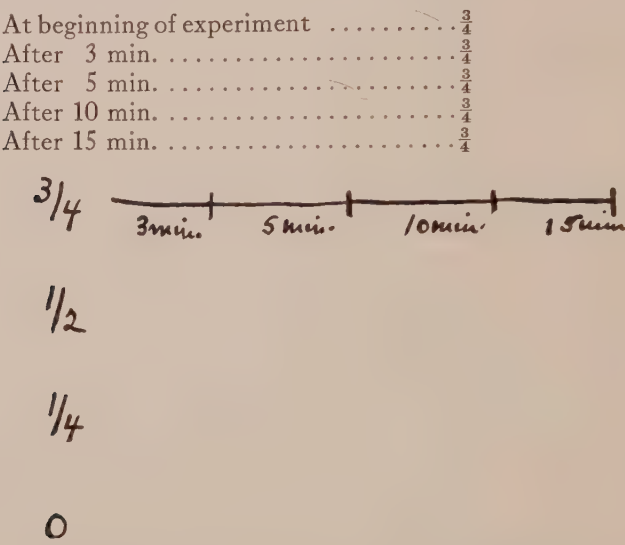
Experiment III. Subject B.—(See Figure I.) Conditions same as in Experiment I.

Palms held loosely on electrodes $\frac{1}{4}$
 Medium tension of palms $\frac{1}{2}$
 Palms held tightly for some minutes . . . $\frac{3}{4}$

These experiments demonstrated that increasing the muscular tension caused an increase in the movement of the mercury column, while decreasing it caused little or no movement.

Experiment IV. Subject B.—(See Figure II.) Con-

ditions as in Experiment I. Hands allowed to rest for some time on the electrodes without a change in muscular tension, with the following results:



WAKING SUBJECT B. Total time of experiment, 15 min.

FIGURE II—Showing a prolonged experiment with same degree of muscular tension maintained throughout. Note that the movement of the mercury column is not exhausted; it remains the same. The readings were taken by opening the short-circuit key at the points indicated where the short vertical line crosses the horizontal. The figures represent the time elapsing between each reading in minutes.

The same experiment was tried a number of times with the same subject and also with subjects M. and C. for longer periods, and always with the same results, thus demonstrating that prolonged resting of the palms with the same tension on the electrodes in a waking subject causes practically the same amount of movement in the mercury column. Exhaustion of reaction does not take place if a sufficient interval be allowed to lapse between each test.

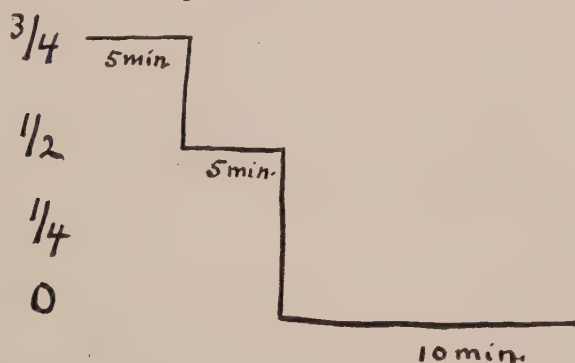
B. Experiments with Sleeping Subjects

All these experiments were carried out in a darkened room with the subject resting either in a large comfortable chair or lying on a couch. Monotonous sound stimulus not used.

Experiment I. Subject A.—Lying relaxed on a couch, room darkened, eyes closed, hands perfectly dry and palms resting on the zinc electrodes.

At the beginning of the experiment . . . $\frac{3}{4}$ (awake)
 After 5 min. $\frac{3}{4}$ (awake) . . .
 After 10 min. $\frac{1}{2}$ (drowsy)
 After 20 min. $\frac{1}{4}$ (very drowsy)

Experiment II. Subject A.—(See Figure III.) Conditions same as in Experiment I.



SLEEPING SUBJECT A. Total time of experiment, 20 min.

FIGURE III.—The fractions represent the degrees of movement of the mercury column of the capillary electrometer expressed in quarters of the microscopic field. 0 indicates no movement. The figures beneath the curve represent the time elapsing between each reading in minutes.

At the beginning of experiment $\frac{3}{4}$ (awake)
 After 5 min. $\frac{3}{4}$ (awake)
 After 10 min. $\frac{1}{2}$ (drowsy)
 After 20 min. 0 (soundly asleep)

Experiment III. Subject A.—Conditions same as in Experiment I.

At the beginning of experiment $\frac{3}{4}$ (awake)
 After 3 min. $\frac{3}{4}$ (awake)
 After 5 min. $\frac{3}{4}$ (awake)
 After 10 min. $\frac{1}{2}$ (drowsy)
 After 15 min. $\frac{1}{2}$ (drowsy)
 After 20 min. $\frac{1}{4}$ (very drowsy)

Then awakened and immediately the movement of the mercury became $\frac{3}{4}$.

Experiment IV. Subject A.

At the beginning of experiment $\frac{1}{2}$ (awake)

After 20 min. 0 (tight asleep, complete muscular relaxation).

Awakened, the movement became $\frac{1}{2}$ again.

A number of other experiments under the same conditions, with the same subject, produced identical results, viz: a varying movement of the mercury column as the subject went from the waking state to drowsiness, absolutely no movement when the subject was tight asleep, and a return to either the same or an exaggerated movement when the subject was awakened or awoke spontaneously.

Experiment V. Subject A.—(See Figure IV.) Retired for the night with the dried hands resting on the zinc electrodes. Room dark. Instrument in another room.

At beginning of experiment $\frac{1}{4}$ (awake)

After 25 min. 0 (asleep)

After 40 min. $\frac{1}{4}$ (awake)

After 60 min. $\frac{1}{4}$ (awake)

After 70 min. 0 (asleep)

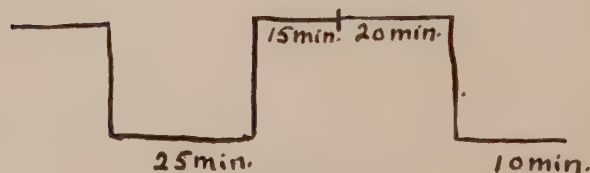
If the data given above be compared with the curve of normal sleep it will be found that the results are almost identical, namely, that the greatest depth of sleep is reached in about an hour, and this period corresponds with the greatest degree of muscular relaxation.

$\frac{3}{4}$

$\frac{1}{2}$

$\frac{1}{4}$

0



SLEEPING SUBJECT A

FIGURE IV—Total time of experiment, 1 hour 10 minutes.

Experiment VI. Subject B.

At the beginning of experiment	$\frac{1}{4}$ (awake)
After 5 min.	$\frac{1}{4}$ (awake)
After 10 min.	$\frac{1}{2}$ (drowsy)
After 12 min.	0 (asleep)
After 15 min.	0 (asleep)

Other experiments with the same subject gave identical results.

Experiment VII. Subject C.— (See Figure V.)

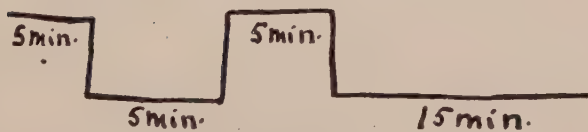
At beginning of experiment	$\frac{1}{4}$ (awake)
After 5 min.	$\frac{1}{4}$ (awake)
After 10 min.	slight movement (drowsy)
After 15 min.	$\frac{1}{4}$ (very drowsy)
After 30 min.	0 (asleep)

3/4

1/2

1/4

0



SLEEPING SUBJECT C

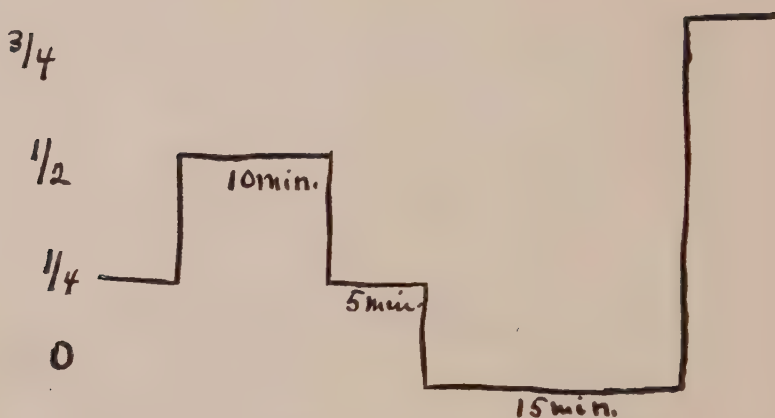
FIGURE V.—Total time of experiment, 30 min.

Experiment VIII. Subject C.

At beginning of experiment	$\frac{1}{4}$ (awake)
After 15 min.	0 (asleep)

Experiment IX. Subject C.— (See Figure VI.) These experiments were tried after the subject had been exposed to an evening of mental and physical fatigue.

At beginning of experiment	$\frac{1}{4}$ (awake)
After 10 min.	$\frac{1}{2}$ (awake but drowsy)
After 15 min.	$\frac{1}{4}$ (very drowsy)
After 30 min.	0 (tight asleep)
Awakened	$\frac{3}{4}$



SLEEPING SUBJECT C. Time of experiment, 30 min.

FIGURE VI.—Note the sudden increase of the movement of the mercury column to above the normal, when the subject was awakened after fifteen minutes of sound sleep, during which latter time the mercury column was motionless.

Other experiments with the same subject gave the same results.

G. Experiments with Hypnotized Subjects

Experiment I. Subject N.—(See Figure VII.) Readily hypnotized by fixation, impossible to open eyelids, no post-hypnotic amnesia. At the beginning of the experiment the hands were placed lightly on the electrodes and allowed to rest there during the period the subject was hypnotized.

Before hypnosis	$\frac{1}{4}$
Beginning 5 min.	$\frac{1}{4}$
In hypnosis 7 min.	$\frac{1}{4}$
In hypnosis 10 min.	$\frac{1}{4}$
Awakened from hypnosis	$\frac{1}{4}$

Experiment II. Subject N.

Before hypnosis	$\frac{1}{2}$
At beginning of hypnosis	$\frac{1}{2}$
In hypnosis 15 min.	$\frac{1}{2}$
Awakened from hypnosis	$\frac{1}{2}$

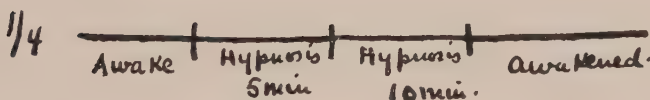
Experiment III. Subject O.—Very quickly hypnotized, inability to open eyes — no post-hypnotic amnesia.

Before hypnosis	$\frac{1}{4}$
In hypnosis 2 min.	$\frac{1}{2}$
In hypnosis 5 min.	$\frac{1}{4}$
Awakened from hypnosis	$\frac{1}{4}$

Other experiments in hypnosis with the same subjects gave identical results.

$\frac{3}{4}$

$\frac{1}{2}$



D

HYPNOTIZED SUBJECT N. Length of hypnosis, 10 min.

FIGURE VII.—Note that the mercury column maintains an even movement, being the same before, during, and after being awakened from hypnosis.

VI. A THEORY OF SLEEP BASED UPON EXPERIMENTAL EVIDENCE

When we come to analyze these experiments, several factors stand out prominently, and these factors are identical for all the subjects. While listening to a monotonous sound stimulus tended to produce a drowsy state and finally sleep, the same condition invariably took place when the element of monotony was not used, thus demonstrating that this factor is not necessary for sleep. In the second place, either with or without the use of a monotonous sound stimulus, sleep did not take place, if the entire body or even a portion of the body, such as one limb, was in a state of muscular tension. Thus although there must be a limitation of voluntary movements to produce sleep, this limitation must be of the nature of a muscular relaxation, and not of a muscular tension.

In the third place, experiments with electrical stimuli

on completely relaxed subjects under ideal conditions necessary for sleep (dark room, reclining, eyes closed, sometimes ears stopped, late hour of the night), demonstrated that sleep does not result so long as the stimulus is felt, but only when the stimulus itself is reduced to zero or when the threshold of stimulation is reached, which later, for the subject, is the same as if the stimulus were at zero. Therefore sleep is not due to any exhaustion of the cell or organism, and can only take place when the stimulus effect for the subject is zero, or what amounts to the same thing, when the stimulus itself has reached just below the threshold of perception, when it ceases to exist for the subject. This was clearly demonstrated in Subjects M and B, Experiment VII. Changes from muscular tension to muscular relaxation produced sleep: changes from muscular relaxation to muscular tension induced complete wakefulness in the drowsy subject. The conditions produced in all cases were genuine sleep and not hypnosis, as evinced by the amnesia, the dreaming, and in some cases a genuine nocturnal paralysis.

The results secured by means of the capillary electrometer were an exact confirmation of the effect of muscular tonus upon the production of sleep. It was possible by means of this instrument to demonstrate with almost mathematical exactitude the moment when the subject fell asleep, and furthermore, the instrument also measured the increasing drowsiness. As the subject became more and more drowsy the movements of the mercury column became less and less, until finally they ceased. This cessation of movements always corresponded with the onset of deep sleep. The movement remained nil while the subject was tightly asleep, but would show slight variations as the subject moved in sleep. On awakening the subject, or when the subject spontaneously awoke, the original or even a greater movement of the mercury column occurred at once.

The movement of the mercury in the waking or drowsy subject was always positive, and this movement grew less and less as sleep was approached. In some cases, however, just before the movement of the mercury ceased altogether

there was a transitory sudden increase, but in these cases the movement was always a negative one and not positive. The reason for this negative pre-sleeping increase I am unable to state.

Now it could be shown from the data secured with waking subjects, that the gradual decrease of the movement of the mercury column was always parallel with a decrease in the muscular tension. In other words, the increasing muscular relaxation which preceded sleep was parallel with a decreasing movement of the mercury, and when this relaxation was completely established in sleep, the mercury ceased to move altogether. That this was not due to any exhaustion of the movement itself was shown by the fact that in waking subjects the same experiments carried out for the same period of time did not change in the slightest the movement of the mercury column, except in some cases to make it actually greater. Furthermore, it could be demonstrated that in waking subjects the excursion and rapidity of the movement depended upon the degree of muscular tension. When the muscular tension was at a certain degree the column moved rapidly and through a long distance. When it was less, it moved slowly through a shorter distance. Now with increasing drowsiness, not only did the movement of the mercury become less, but it moved more slowly, thus proving that the same factor of decrease of muscular tension was at work in the drowsy states. Furthermore, in order to eliminate as much as possible the electrical currents generated by the body itself or the action of the sweat glands, the hands in all the experiments were washed with alcohol and ether and thoroughly dried.

The results of the experiments with hypnotized subjects gave results that differed from those of the sleeping subjects. In fact, the results were the same as in the waking state, the movements of the mercury column remained the same, thus demonstrating that, at least so far as muscular tension is concerned, hypnosis and sleep are not identical.

In some of my prolonged experiments with the capillary electrometer, when the subject had retired for the night under normal conditions, showed that the greatest depth

of sleep was reached in about an hour, an observation which agreed with other investigations on the curve of sleep.

It is not the monotone of a sermon or lecture which makes us fall asleep, but we sleep under these conditions because we become inattentive. This inattention causes the muscles to relax, and this relaxation of the muscles produces sleep. It is for this reason that we fall asleep more easily when reclining, as this position is conducive to muscular relaxation. It was pointed out by Tarchanoff that young dogs sleep better in a horizontal position, due, he believes, to changes in the cerebral circulation, but, according to my view of the subject, it is the greater muscular relaxation produced that causes a greater ease of sleep in this position. It is well known that kinesthetic and motor sensations stand in close relationship to, and indeed form an integrative part of all attentive processes. Any attention to a stimulus or attentive act is accompanied by widespread motor phenomena. When we relax, the motor phenomena become lessened and this tends to produce drowsiness and finally sleep, due to a diminution of peripheral stimuli from the muscles to the brain, produced by the act of muscular relaxation. When we close the eyes in an attempt to sleep, this also shuts out a mass of stimuli from the muscles and the various peripheral neurones, the brain becomes less active and sleep takes place. The peripheral centripetal neurones, the sensory neurones, the muscles, skin, tendons, and the organs of special sense, collect and convey the bodily impressions to the central nervous system. To a certain extent, even impressions are brought from the muscle sense to the brain. Sherrington proved by physiological experiments that the muscle spindles are connected with the sensory roots of the cord, and thus can convey impressions from the periphery to the center. Barker states as follows: "The whole makeup of the muscle spindle or neuro muscular bundle impresses one as a structure especially adapted as a sense organ to give information concerning the various states of tension in the muscles."¹ The peripheral apparatus of the muscular

¹F. Barker. *The Nervous System*. P.X., 18.

sense includes the apparent nervous apparatus of the muscles, joints, and bones, and to the organs of the muscular sense is largely traceable the feelings of fatigue. The nerve endings in the muscles as well as in the skin are very complex. These terminal organs are very numerous, and have a specific function to convey stimuli from the periphery to the center. (Von Frey, Sherrington.) In addition to a so-called "tonus," there is a specific muscle tonus.

Neither monotone nor exhaustion are necessary for sleep, because sleep can take place equally well and equally rapid when a monotonous stimulus is not used. Therefore I believe that a monotonous stimulus has nothing to do with sleep, because even when these are at a minimum and slightly above the threshold, they tend to keep the subject awake. In none of my experiments could I observe the production of sleep even when a minimum stimulus was used over prolonged periods. It could also be shown, that in a sleeping subject if sufficient stimuli were used to rise above the threshold, no matter how monotonous, the subject at once was awakened.

The reaction to stimuli is very complex. It has been stated so far as demonstrated by my experiments, that sleep takes place, not because, with the stimulus remaining the same, the organism becomes exhausted or becomes accustomed to the stimulus, according to certain laws of change of reaction under prolonged stimulation, but only if the stimulus itself is diminished to zero or to the threshold, both of which are the same so far as the organism is concerned. According to Verworn, a stimulus may be defined as every change of external agencies that acts upon the organism and may have upper and lower limits, that is a maximum and minimum. With minimum stimuli the phenomena of fatigue and exhaustion soon develop; with weaker stimuli this development is delayed. Verworn points out,¹ that "in contrast to these phenomena both of adaptation and fatigue, in a few cases with prolonged stimulation, the reactions continue with equal intensity." This probably explains why in my experiments sleep did not take place so long as the stimulus was felt, and also that a

¹General Physiology.

uniform monotonous and prolonged auditory stimulus is not necessary for the production of sleep.

Therefore when sleep takes place, it is not because the organism becomes fatigued or exhausted by a strong stimulus, as under these conditions the subject tends to remain awake. Sleep takes place only when the stimulus itself has actually diminished to such a minimum that it is not felt by the subject. This minimum corresponds to zero or to a point just below the threshold. This diminution or absence of stimuli modifies or changes the excitability of the centers upon which the waking condition depends. Even with minimum stimulus there was a noticeable fluctuation, the subject sometimes feeling the stimulus and sometimes not. This in itself was sufficient to keep the subject awake, although the subject fluctuated between complete awakening and slight drowsiness, but never fell completely asleep until the stimulus was actually diminished during the course of the experiment. While sleep took place when monotonous sound stimuli were used, yet the same depth of sleep could be produced when these were absent — provided the subject was in a state of muscular relaxation. A state of muscular tension kept the subject awake, even in the presence of monotonous sound stimuli. These experiments demonstrate that muscular relaxation and not monotonous stimuli, either auditory or tactile, are necessary for the production of sleep.

The activity of consciousness depends upon incoming peripheral stimuli from the muscles and sense organs. When these become diminished there is drowsiness; when they are absent, or nearly so, sleep takes place. The greater part of these stimuli came from the muscles when they are in a state of normal tonus or of tension. It is for this reason that muscular tension keeps the brain active and the subject awake, by pouring stimuli from the periphery into consciousness. Muscular relaxation not only accompanies sleep, but seems actually to precede it, and to be one of the factors by which the total amount of stimuli pouring into consciousness is diminished, as shown particularly by my experiments with capillary electrometer. The brain state during sleep or drowsiness is therefore a state of diminished

or negative activity. Dreams take place because the brain is somewhat active; in deep sleep where the brain is completely at rest it is doubtful if dreams occur at all. Most sufferers from insomnia keep their muscles in a state of tension, either voluntarily or involuntarily, and this tends to interfere with the production of sleep. The brain state in hypnosis is active and waking, and serves as an open channel through which ideas can be introduced. This could not be otherwise when we consider that, as my experiments showed, the reactions to the capillary electrometer in hypnotized subjects was the same as in waking subjects.

Subjects fall asleep under conditions of complete muscular relaxation, when fully rested or when fatigued, this again demonstrating the absence of relationship between sleep and fatigue.

The dependence of sleep on muscular tonus is also shown by the fact that when we "fight" against drowsiness, we do so by voluntarily placing our muscles in a state of tension. When we allow ourselves to relax, sleep results. Sometimes great fatigue tends to keep one awake, because the fatigue symptoms are localized in the muscles. Sleep is an instinct, an inhibition of muscular tension. Monotonous stimuli keeps us awake by pouring themselves into the brain and keeping it active, and sleep can only take place if these stimuli are reduced to zero or to the threshold. Yawning before sleep is an effort to bring about muscular relaxation. This muscular relaxation is a necessary condition for sleep in all the higher animals. In the lower organisms sleep was probably limited to motionless states of relaxation, which had all the characteristics of a simple, elementary instinct or tropism. Those organisms survived which possessed these relaxed reactions to their greatest extent, and from these sleep arose. All motionless states in animals are not sleep, however, neither do they resemble sleep, but are probably a variety of hypnosis, as demonstrated by my experiments.

CONTRARY SUGGESTION

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THE normal and the abnormal have been traditionally opposed to one another in human imagination. The latter has been conceived as an independent system of phenomena having its own specific character and manifestations. Technical terms, concepts, and laws have been devised in dealing with its various types, which constitute a highly specialized terminology. The result is that the field of the abnormal is not only differentiated from the normal, but contrasted with it in thought. The general system of phenomena to which both normal and abnormal belong is thus divided into two provinces, which are conceived to be subject to unlike laws and to require different principles for their reduction.

In the practical attitude which man has taken towards these phenomena, as well as in the theoretical treatment which has been accorded them, the sense of logical isolation persists, bringing the two classes into a new opposition. Because disease is the opposite of health its subject must be treated in ways radically different from that applied to the healthy organism. The individual who is abnormal in his frame or features is a changeling, the offspring of a foreign and detested race of beings. The mind that is unbalanced is ostracized and disowned by human society. The treatment of mental diseases has traditionally consisted in the application of a monstrous system of such inverted concepts. The subject of disturbed functioning is regarded as a new being, of a nature not susceptible to the treatment which normal individuals receive. He is branded as bewitched, obsessed, diabolic; and the logical distinction thus made becomes a warranty for the invention of strange and inhuman modes of discipline and cure.

An essential inversion of the natural relations of things is involved in this traditional conception of disease, yet

though the whole weight of the history of thought is against it, the conception, like a distorting medium, has hung before men's eyes century after century, blinding them to the true nature of physical disease and mental abnormality alike. So long as this attitude persists understanding will be perverted, justice thwarted, and helpfulness paralyzed. Yet, even to-day, if a man have the mark of a strange disease upon him, or be the subject of any pronounced mental aberration, he is shunned and even feared by the generality of his fellows; while even in the enlightened and sympathetic it needs a certain resolution to transcend an instinctive revulsion which is probably the echo of a primitive conservative reaction expressed in the disownment of injured and diseased members of the herd.

Though it may thus have a certain historical justification, the prevalence of this point of view perverts the basis of our logical treatment of phenomena as well as inhibits the stimulus to social aid. Instead of positing an essential likeness among individuals belonging to the same general class, it ignores the basic resemblances which mark them, and erects into a principle of classification a single highly specialized group of phenomena. So long as men conceive a disease to represent a fundamentally different process from normal physiological functioning, disjoining where they should unify, so long will an obstacle be put in the way of understanding its true nature; and so long as men deny the application to pathological mental phenomena of those conceptions which have rendered the normal processes of the mind intelligible, the description of their features will continue to be fantastic and their practical treatment blind and futile. A comprehension of abnormal activities must proceed from a knowledge of the laws of normal functioning. As the human features distorted by pain are the human features still, and as every element is but the original feature modified in a certain direction, so is the abnormal in general but a special modification of the normal, in which is to be found its explanatory principle. Each feature of the abnormal is to be conceived as a transformation of a normal characteristic.

The phenomena which the pathology of mind presents have their starting point in the reactions of the normal life;

and a series of gradations connects the extremes of mental functioning. In the study of the mind's normal activity, therefore, is to be found the key to mental pathology generally. As the science of physiology forms a natural and necessary introduction to the study of physical pathology, so the success of the alienist is laid in a thorough acquaintance with normal psychology. The task of the mental pathologist is to identify the original of each disturbed functioning in his subject, and to determine the direction and amount of divergence. Only on the basis of such a procedure can an intelligible classification and description of pathological phenomena be attained. In it also are to be sought the principles of mental therapeutics, since the ways in which special attitudes are developed and reactions modified under normal conditions afford the most general suggestion as to the modes of access to pathological states and their treatment.

It is this conception of the relation between the pathological and normal fields of experience which underlies the following attempt to trace and characterize the more important forms in which contrary suggestion is manifested in the latter province, and to indicate certain aspects of its significance as a constituent of reaction in the rational human subject.

The sequences and decisions of the individual mind, and consequently the course of its adaptive reactions, are subject to incessant modification through the ideal and perceptual increments by which the stream of consciousness is continuously enriched. The specific relations between the components of this system of stimuli and their effects have been empirically established; and the response of intelligence, in one's relation to the external world, consists in the maintenance, both in reflection and in action, of the regular and permanent sequences which the order of nature presents. It is the business of the practical consciousness to discover and be guided by these natural associations and thereby to secure an optimum in the conditions of existence. In the history of an individual intelligence the evolution of an object consists in the development of the system of significant relations in which it stands to the larger world of reality, in virtue of which it is endued with a series of specific values as the index

of certain characteristic associates and habitual consequences. Each object, whether perceptual or ideal, thus becomes the potential starting point of a reaction on the part of the mind; and this capacity may be called, in the looser use of the term, its suggestive value. Every thing, every word, every idea possesses for the individual mind such a stimulative influence, the form of which is dependent in part upon the general features of the external world and its uniformities of connection, and in part is determined by the constitution of the mind in question. Its appearance within the field of attention reinforces or arrests, accelerates or retards, modifies in this direction or in that the system of ideas and reactions by which the individual consciousness at that moment is characterized.

Theoretically the relations which exist between this system of ideal stimulations and the reactions to which they lead range in fixity from the zero point to invariability. Sometimes the individual associations which appear seem to reflect no necessary, or even discoverable, objective connection, — in which case we call them random suggestions, conceiving them to be dependent upon the purely accidental constellation of the ideal system at the moment; sometimes they represent a connection so stable in experience that the subversion of the relation in ideal representation is imagined with difficulty.

When a definite order has thus arisen among the elements of experience each such ideal stimulus has a specific direction and effect within the course of thought and action. When this direction is taken as a consequence of its appearance we say that the stimulus has had its direct or natural suggestive effect. When this characteristic relation is disturbed and the stimulus leads to an unusual thought or provokes a novel reaction we say that its normal suggestiveness has been inhibited on account of some individual factor of variation. Without such an established or habitual system of associations the suggestiveness of a given stimulus could have no meaning. The term implies solely this tendency to be followed habitually by a specific modification in the stream of consciousness and its associated system of reactions. Upon this basis of established order in the

succession of ideas and adaptations rests the whole series of concepts in terms of which the forms of suggestion are commonly discriminated in psychological discussion. The group of specific types which this field of relationship comprises may be described in terms of three such concepts. The first is that of random suggestion, wherein an associate with which it has no discernible permanent relation is aroused by the stimulus, either because it is the expression of a primitive mental situation which antedates the establishment of a stable order of associations of any kind, or for the reason that at the moment of its occurrence this permanent system of relationships is broken up. The second type is that of direct or normal suggestion, in which the results of the habitual connections of experience are expressed in a useful or significant series of associations. The third and last of these forms is that to which the name contrary suggestion has been given, in which the stimulus not only fails to arouse that reaction which constitutes its habitual associate in general human experience, but prompts its simple and direct contrary.

Several forms of associative integration closely allied to one another may be grouped under the single term "contrary suggestion," since in each case the direct tendency of the stimulus to provoke an imitative response is suspended, and a reaction of an opposed type takes its place. The first of these forms is the inhibitive reaction proper, having its typical embodiment in the response to a situation previously accompanied by pain. The primary tendency, in such a case, is characteristically replaced by a condition of hesitation — if the pain were slight — in which the opposing solicitations alternate, and the tendency is now to do the act and then to refrain from it; or by immediate suppression of the reaction if the pain have been sufficiently intense or the association repeatedly experienced. Discomfort, dislike, humiliation, disadvantage, — any adversely or disagreeably toned aspect associated with a given situation may thereafter act as an inhibitive suggestion when the stimulus recurs. It is not the remembrance of the past suffering and the suppression of an act as the result of weighing alternatives which is here referred to, but a tendency to react immediately and

uncritically, though negatively, to the suggestion which has been made. An idea, the circumstances of whose original occurrence, together with the character of its associations, has wholly lapsed from consciousness may thus set up the old inhibitive reaction when it recurs in such psychical isolation. This is most strikingly illustrated in the case of hysteria, in which the original moral shock which gave rise to the taboo or fear or dislike has been wholly forgotten. In normal life the same type of occurrence is by no means rare. It happens to most of us to have contracted at some time in our lives a dislike for certain things,— foods, odors, colors, or even persons — for which no reason can be given, but for which a cause exists in some earlier experience of mental or physical discomfort, with which the object or person in question has been connected.

Negative reactions of this type arise, finally, as the result of many processes of training in self-control. The thing to be avoided or prevented or anticipated is at first done in spite of the will and can only be lamented after it has happened; later it is accompanied by an acute, and in a sense anticipative, consciousness, but one which is only imperfectly effective; one is painfully embarrassed by the occurrence of the reaction, but its successful inhibition takes place only occasionally and uncertainly. Then, finally, the process is customarily anticipated from its incipient stages and suppressed without conscious hesitation or deliberation. When the latter condition has been established the stimulus may be said to bring about directly the inhibitive reaction.

The conception of contrary suggestion might usefully be extended to include what is commonly called suggestion by contrast. This form of suggestion comprises all those cases in which the idea or impression calls up its natural or conventional correlative. In this class of cases — perhaps in all — the opposites are, from a logical point of view, most closely allied. If one abstract from the fulness of any concrete individual to which the term may be applied,—since any such individual constitutes the potential starting point for an indefinitely large number of association systems,—the thought of the class or quality or relation which a term abstractly denotes has no closer logical associate than the

correlative term. What is more intimately connected with father than son, with subject than object, with cause than effect, with long than short; or, to take a class of cases less specifically defined, what is white more likely to suggest than black, day than night, woman than man? The two are members of a single logical pair, each of which, by virtue of the term applied to it, is singled out from a host of others for the most constant and intimate association with its fellow.

The same general features appear in the class of contrary suggestions at large. To name any specific act or relation carries the mind by an almost inevitable movement toward the thought of its opposite, if once the path of individual experience and its memories be left. In the way of associated ideas what can "go out" so readily suggest as "come in," "stand up" as "sit down," "obey" as "rebel," and so forth? To form such associations is part of the general discipline of life, which is already far on its way when the child first comes to self-consciousness. Association by contrast thus appears as a special case of the more general fact of contrary suggestion.

Gould's cases of incoherent action, due to the insistence upon training the right hand when the subject is naturally and strongly left handed, are probably to be classed here. These incoherencies consist in making the reciprocal of an intended movement, of speaking a word of opposite significance to that which should be used, of putting into the waste-paper basket a paper which should have been kept, while the scraps to be thrown away are carefully filed, and the like. In these cases, while specific suggestion is lacking and no verbal formulation or purpose has taken place, the adaptive reaction proper to the situation is replaced by one of an opposite type as the result of a more profound and permanent disturbance of the normal relations between action and its ideal antecedents.

In its narrowest application, the term "contrary suggestion" is restricted to those forms of reaction in which an idea definitely formulated and constituting a proposal for the adoption of a specific course of conduct or logical attitude provokes a response of opposite character on the part of the

one to whom it is made. Baldwin (*Ment. Devel.*, pp. 137, 138) thus describes and illustrates the phenomenon: "By this is meant a tendency of a very singular kind observable in many children, no less than in many adults, to do the contrary when any course is suggested. The very word 'contrary' is used in popular talk to describe an individual who shows this type of conduct. Such a child or man is rebellious whenever rebellion is possible; he seems to kick constitutionally against the pricks. My child E. showed it in her second year in a very marked way. When told that a new taste was good,—a suggestion readily taken in its positive sense by her sister at that age—she would turn away with a show of distaste even when she had liked the same taste earlier. When asked to give her hand into mine,—a case of direct imitative suggestion—she thrust it behind her back. The sight of hat and cloak was a signal for a tempest, although she enjoyed outdoor excursions. . . . The tendency yielded to the all-conquering onset of imitation late in her second year."

Within the field of contrary suggestion in this narrow sense of the term, two subtypes must still be discriminated, a more elementary and a more complex form. The psychologically simpler, and apparently earlier, phase appears in a form of reaction which is probably as direct and uncomplicated in character as that in which the suggestion is sympathetically met and embodied in an unreflective imitative response, but which takes a direction opposite to that which the stimulus is designed to evoke. The psychological situation involved is elementary; the mind of the reactor is not the theater of an inner debate, as it becomes in the more complex form. There is no strife of motives to be discerned, no balancing of thesis against thesis. The response, though existing in an exceptional complex of relations, is both direct and naive, as if one had said, "Let us not go farther," and the hearer had failed to catch the negative.

This type has its analogue in adult life, but in the latter case the contrary suggestion does not habitually lead to a practical reaction which opposes that implied in the stimulus from which it arose. It appears characteristically in moments of detached consciousness when the words to which

we listen, or on which the eye rests by chance, arouse the idea of their opposite in the unoccupied mind, where they hang idly for a moment before disappearing. In some individual cases this logical preoccupation amounts almost to an obsession. The failure of the representative movement to follow upon the arousal of its ideal antecedent, in such cases, is a secondary feature of the phenomenon, due to the habit which the developed mind had acquired of treating ideas in isolation from the reactions in which they find embodiment. This detachment is the essential feature of the imaginative life and the incessant ideal reconstruction of situations and problems which constitutes reflection, results at last in an isolation of the mental system which has probably little representation at the second year of life, when contrary suggestion makes its appearance in the child.

In the more complex of the two types of negative reaction the result of the suggestion is neither to inhibit the action of the stimulus as such, though it is commonly rendered void, nor is it to substitute a type of response opposed to that of sympathetic imitation, but equally simple and direct; on the contrary, its effect is to complicate the situation by a new range of suggestions. The mental content is enriched rather than depleted; for there is raised in mind the consciousness of an alternative course of conduct, an action reflectively contrasted as well as contrasted in nature with that primarily suggested. The proposal to go out arouses the intention to stay indoors; to turn to the right, that of turning to the left; to return home, that of going farther, and so on.

It is of interest to consider the possible significance of this phase of individual development, and the function it may perform in the enrichment and organization of experience. When a contrary suggestion of this kind arises it does not involve the disappearance from consciousness of the original suggestion. Both alternatives develop before the mind, and, if the child be sufficiently advanced, commonly find expression in speech as well as act. "I don't want to go out; I won't go out," the child says, at the same time that it pushes hat and cloak away. "Be good, and do such and such a thing," results, in this mood, in the conscious resolu-

tion, "I won't be good; I hate this thing and will not do it," as well as in the disobedient act itself.

Consciousness is thus complicated by a strife of inner motives, the opposition to the primary suggestion arousing an activity which is at the same time critical and synthetic. The situation develops on both sides; for, since contrary suggestion occurs typically in connection with stimuli to action having a personal origin, the opposition to such a suggestion commonly provokes its repetition and reinforcement by additional stimuli, arguments, threats, entreaties, rewards. If the opposition persists, these positions must be met critically and the reasons for the alternative course of action developed in the reacting mind.

The significance of this phase of development lies in the mental processes thus aroused, and its importance is beyond question. However bizarre its various manifestations and however perverse the attitude it reveals, contrary suggestion represents the method by which the child naturally passes from an uncritical acceptance of suggestions and their immediate embodiment in action, to a reflective consideration of the respective values of two alternative courses when offered for selection, and finally to deliberate action and reasoned reflection in all their forms.

The period at which this form of response appears in the development of the child is significant. Baldwin, in the paragraph quoted, notes it in the second year; and Miss Shinn (*Devel. of Child*, p. 27), speaking of the ninety-first week, says: "Contrary actions became more common. They increased in frequency up to the beginning of the twenty-fourth month. At the close of the twenty-fourth month they became less frequent; the child, understanding language better, became more amenable to verbal suggestion"; and again, a little later (p. 31), she says: "In the later half of the second year it became possible for a purely mental stimulus to arouse an inclination towards action. Then the strange period of perverseness through which so many children pass, developed. At the time of the appearance of this phase, the child acted almost entirely from suggestion through association. Hence, when a certain course of action was proposed, the representation of the opposite

course was at once called up and appealed to him with some force, since the ability to perceive the consequences of either act was as yet undeveloped. The child never expressed (in contrary mood) the mere negation or refusal; he proposed an alternative. Frequently, though not always, the representation did not prompt to action, and fell away upon the repetition of the suggestion. If, however, one agreed with him, saying, 'Well, we shall do as you wish,' he often burst into tears, demanding that the original plan be carried out, and thus showed the side on which the preponderance of desire hung."

At this age the child has made some progress in walking and is beginning to acquire speech. His recently achieved control over his limbs carries him away from his mother's side, and his eagerness to handle things brings him into contact with a multitude of novel objects. He is no longer protected, as he was during the first year of life, by his own helplessness and the more continuous attentions of his mother, but is exposed to new dangers and compelled to face problems and solve them through his own ingenuity. This advance, together with his growing understanding of language and alertness of observation, increases the range of his objects of attention and of his ideas, and thus furnishes him with the materials for a more complicated mental life.

At the same time the situations into which he is plunged with increasing frequency as his movements are made with more and more freedom and the range of his activities is extended, are such as to call for caution and preliminary examination to a degree never demanded when nothing was allowed to reach him until it had passed the mother's inspection. This period of his existence is consequently marked by incessant minor tragedies, by mental shocks and physical suffering; and the child's conduct begins to reflect the uncertainties of the world in which he finds himself.

Along with these phenomena appears another form of change which probably co-operates in preparing the child's mind to be the theater of the contrary suggestion. With the mastery of the art of walking comes a disposition toward roving and adventure. The child wanders away from the

mother's side and incessantly ventures into strange places and seeks to escape beyond bounds. At the same time, and doubtless as a significant correlative of this change, the old indifference to the presence of strangers and to novel objects is replaced by a trepidation at their appearance, a shyness in the presence of unfamiliar persons, and a dread of unusual phenomena of all kinds. Thus there appear the spirit of venturesomeness, which affords the instinctive basis for the development of self-direction and self-reliance; and the sense of fear and shyness, from which, later, caution and the measures necessary to self-preservation in part take their rise. These two attitudes are now at war with one another, — as indeed they continue to stand related throughout life — and give rise to a form of reaction which is characteristic of the period, namely the rapid oscillation between confidence and timidity, approach and flight, in the presence of persons and objects of all kinds.

It is a transitional stage between lower and higher forms of conduct, and presents elements of disco-ordination characteristic of all changes of direction in development. The phenomenon of contrary suggestion may be said to sum up and represent the essential features of this phase in the individual's history. The child is now breaking up an old habit and a new reaction is under process of establishment. His response to the stimulus is no longer directly receptive and imitative, nor is it yet, in the proper sense, reflective and rational. The alternative is provoked in consciousness, as it must be if any proposed course of conduct is to be weighed and rationally decided; but it is not critically compared with the original suggestion, as again it must be if the course of conduct which emerges is to constitute the highest attainable adaptation to the situation. The contrary suggestion is thus not to be viewed as rebellion against discipline, or the rude assertion of the self against the oppression of a foreign will, and nothing more; it represents rather that stage in the normal process of self-development in which the crude materials of rational action have been given, but in which successful co-ordination has not yet become possible. In it one of the two elements of deliberate action has appeared, but the second and peculiar feature is still lacking; there is

present to the consciousness of the reactor the idea of an alternative course of conduct aroused by that which has been suggested, but not the weighing of considerations for and against each course as a preliminary to the final adoption of one of them.

The type of reaction which contrary suggestion represents thus falls far short of the ideal of rational conduct. To have become the characteristic form of reaction in an adult is an indication of arrested development. It is essentially a transitional stage, to be transcended by the utilization of the content of the contrary suggestion to develop the various motives for action involved in the case on either side, and thus step by step to establish that habit of reflecting upon the reasons for and against any suggested course of conduct which we call deliberative or rational procedure.

This higher synthesis of motives is promoted in two general ways. The first of these is to act precipitately upon the contrary suggestion and to suffer whatever consequences may be involved therein, the experiential discipline entering into subsequent conduct as a new modifying element, which both occasions a pause in adopting the contrary suggestion and thereby allows time for other considerations to arise, and in itself exerts an inhibitive influence upon the contrary act.

The second is the method of dialectic, a vicarious process in which the two theses are developed in contrast with one another, the suggester arguing for the original course, the reactor for the contrary. In this way,—the method of instruction or reasoning—the whole situation is thrown into relief in the consciousness of the reactor who is thus led not simply to pause before he acts, but also to review the complex system of factors involved in the case. Under the guidance of a wiser intelligence action is thus made deliberate and rational. The first way, of learning by experience to develop the two sides of every question presented to the mind through suffering the ill-consequences of precipitate action, is the starting-point of all deliberation, but in its nature is elementary and wasteful. The second method, in which by reflection and instruction the consequences of either course are reviewed before reaction, increasingly supplements the

first form as life advances, and constitutes the measure of intellectual attainment in the individual. It is the chief distinction of the human mind, from this point of view, that the development of a habit of rational action through the method of instruction has become one of its institutions. The ideal type of human action, which all conscious education seeks to develop, is that in which each novel situation is critically reviewed as it arises before it is responded to by an adaptive reaction.

In many of the more complex forms of negative reaction the term "contrary suggestion" is scarcely applicable. The impulse throughout the whole range of these phenomena is indeed to oppose the suggestion which has been offered, but not in the form of a bare contradiction or will to do the contrary. In its higher forms the tendency permeates the whole structure of mental life in its social phases, and forms an indispensable element in the pleasure which intellectual activity affords. It is the element of contrast which gives zest to human intercourse, the play of character against character, the relief of one point of view when thrown up against its opposite. The bite and sting of the retort has its roots in this tendency, as well as our delight in all kinds of intellectual fence. The savor of conversation lies in thus developing one's own opinion as an opposing thesis to the view which another has announced, not in tame agreement with opinions already expressed. Intellectual enjoyment reaches its acme in the presence of a brilliantly maintained argument, in which each point is seized and rebutted by the opponents with an instant array of arguments, in which there is a never-ceasing demand upon the debater's resources of logical acumen, information, fancy, and wit.

If in this form of after-dinner debate the finest flavor of intellectual enjoyment is brought out, it is because this class of mental diversions constitutes a most valuable form of organic exercise in those functions of mind which are indispensable to success in the serious engagements of life. Competitive struggle is universal in the human world. It not only conditions survival in our professional activities, where the primary qualification is mental capacity, but reappears in every personal relation, however trivial. Intercourse is

itself a form of conflict, and to meet is inevitably to oppose. The human person stands instinctively on guard in the presence of another, with all the weight of a thousand generations of strife behind him. The slightest manifestation of rivalry is sufficient to cause him to flame out in active opposition. One must hold one's head high and puff out one's chest in return; one must outstrut and outboast the antagonist, or suffer humiliation. Social aggression is instinctively met by resistance, for it is a challenge old as life.

This antagonistic reaction to the stimulus which a contact with other human wills affords, stiffening, as it were, the whole psychic frame with resistance to their momentum, is an element in all our higher activities, logical and esthetic, as well as practical. At best the fighting beast in us slumbers, it is never dead. The struggle for existence has been too long, it has turned too cardinally upon the possession of positive mental attributes for any trespass upon the self to be suffered in silence. Competition is still the business of life, so significant, so engrossing that we start up at the earliest hint of it and take our places, spectators or protagonists, as the case may be. In conflict, in the duel, lies the acutest center of interest which life holds for us. Even in its paltriest manifestations it has a fascination. A dog fight in the street is never without its ring of eager spectators; it will interrupt business and crowd the office windows with heads; it will distract the attention of both class and teacher in the quiet schoolroom, and has been known even to draw the congregation from about the altar. The breathless on-lookers who gather about a street fight or surround the stripped sluggers in the ring, the spectator who follows the elaborate thrust and parry of the foils, the listener to the give and take of lively conversation, the audience enjoying the intellectual attack and defence of a public debate are all, in this respect, brothers. Each is present at the primal relaxation of life, modified in each case to suit the peculiar mental constitution of the individual. Tilting is the game of life because war is its business.

The struggle for success is almost universally tinged with personal motives, and in a perpetual endeavor to surpass our rivals the chief energies of life are expended. By accumula-

tion of wealth, by style of living, by beauty of person and elaborateness of dress, by display of knowledge or of intellectual force each tries to subjugate others; and so aids in weaving that network of restraints by which society is kept in order. Not one of us is content with unfolding his own individuality to the full; we have a restless craving to impress our individualities upon our fellows and, in some relation or other, to subordinate them to ourselves. We reason and engage in argument, we persuade in minor matters and attempt conversion in the profounder attitudes of life,—undertakings which we prosecute by gentle means when possible, but if not, then by torture and the stake. Social ostracism and religious persecution are but relics of a period when the struggle against a hostile world, human and superhuman and demonic, raged with unimaginable ferocity, when earth was crowded with natural enemies and the air filled with supernatural terrors,—when it was felt that the group must hold together at all hazards or perish, and that absolute conformity must be the price paid for survival.

From the beginning strife has been the order of the day. The struggle for life and the satisfaction of its elementary needs was followed by that for life's betterment, for the more favorable habitat and those permanent necessities upon which stable and prosperous living depends; rivalry for mates, first by the exercise of brute strength and endurance, but later by the exhibition of skill and grace, beauty and song; and lastly, free and noble emulation in all the virtues and attainments of humanity. It is this profound biological significance in human history which has given to the opposition of human wills a pre-eminent place in all our interests; and it is the necessity for perpetual vigilance and self-defense which has given their general form of antagonism to all our games, and affords us, even as spectators of mimic engagements, such delight in physical and mental encounters alike.

Now the basis of all successful opposition is imitation. One must be familiar with the weapons an opponent uses if he is to be overthrown. Only on his own ground, whether of strength or skill or knowledge, can he be met and overcome. To rival and excel an adversary one must be all that he is,

and more; one's self must comprehend his and transcend it. The process is the same whatever be the field within which competition arises. The larger self,—larger in strength or skill or cunning, larger in information, in training, in wit — is achieved only through a process of social imitation. In the acts and qualities of other human selves the elements of ideal worth are discovered by each individual, who makes them his own through persistent imitative exercise. No limit can be set to the discipline which individuals will thus undergo in order to compass such an end. A life is not too much to be spent in the attainment of success against a strong rival, and victory at last,—even though the conquest be petty and the antagonist mean—is felt to pay for the whole course of self-denial and training.

In the concrete experiences of life these two factors are constantly interwoven. Neither imitation nor opposition appears in its purity, but always a modification of the type through the reaction of a unique personality upon it. Whether the specific aim be to maintain the prescribed form of adaptation or to depart from it as radically as possible, the psychological situation remains unchanged. Imitation everywhere supports opposition, and in its most sedulous attempts at reproduction the individual will introduce incessant variations. All that one has mastered through imitation is thereafter available to set off his contrast with others, and is used to further his social triumphs. On the other hand, also, the will to assert oneself through social rivalry lies commonly at the basis of our most painstaking discipline.

These opposed forms of reaction enter as constituents into all rational life, and action may thus fall short of its ideal type in either of two ways, which are representative of the successive stages in mental development already described. The first and more elementary form is that of slavish imitation, in which the suggestion is uncritically received and put into execution. It represents the primary and immediate reaction upon a stimulus which at the moment dominates consciousness. In such a case the mind of the imitator is narrow and meager, since the suggestion is either uncomplicated by any system of associated ideas, or by such only

as are, in an elementary sense, congruous with it. It is the type of action which we call unreflective or precipitate. To have become characteristic of an individual marks him as deficient in all forms of intellectual freedom and independence. He follows the fashion and is at a loss when he must choose for himself. He quotes the opinions of others instead of having views of his own. He values precedent and relies upon formulated laws, because he is incapable of analyzing the situations which confront him, and of apprehending their underlying principles as problems for the practical will. He is afraid to be odd or singular, to stand alone in his opinion, because he has never acquired the habit of thinking for himself. In politics he is conservative; in morals either reputable or a hypocrite; in manners and speech *a la mode*. Even in his sins he follows the fashion and depends upon precedent. Since sinning — as transgression of a law recognized by the self — involves an explicit contrary suggestion, he is likely to achieve a reputation vicariously, as Kipling makes him do when he embodies this type in the character of Tomlinson.

In so far as action is of this type all freedom and progress are impossible. Its attitude is inert and dependent. Free variation, which is indispensable to advancement, it not only lacks, but consciously opposes, as a principle of individual determination. Its function extends only to a passive conservation of existing social modes irrespective of their ideal values, since its reaction is not representative of a critical estimate of values in human conduct. Its social significance is thus merely in contributing a primitive inertia to prevailing custom.

The second form of defect is manifested in an obstinate opposition to what has been suggested. It represents the second stage in development, in which the idea offered to the mind arouses a counter-idea which takes exclusive possession of the consciousness. The outcome, in so far as the psychological nature of the reaction is concerned, is thus equally elementary with that of slavish imitation. In regard to its social availability and usefulness, action of this second type is of a distinctly lower class than that previously described; for in general the suggestions offered to the mind by its

human environment represent the result of a process of social experimentation and survival,—the usages which society has developed in the course of experience. They are to be held workable, if not ideal; and the opposal of them through elementary contrariness means the adoption, in general, of a disintegrative and anti-social attitude. In proportion as this type of action predominates, the mind becomes blinded to the very bases of rational conduct. It is capable only of offering a blunt and violent opposition to all suggestion, and represents arrest of development at the middle stage of that threefold process through which the normal human subject passes.

In certain individuals this negative reaction to suggestion appears as a permanent and temperamental attitude. Like the child already described it is necessary only to propose a given course, or to bring forward an idea, to have it violently opposed and rejected. The suggestion appears, possibly, as an invasion of the individual's rights, since at least in origin it is foreign to him, and he resents it accordingly. The attitude of judicial reflection is lacking and brute resistance seems the only capacity which persists. In this attitude, whether it be a passing mood, such as the normal subject is familiar with in his own experience, or a more persistent individual diathesis, one's own side of the question is developed only through opposition to each point which an opponent makes. The individual cares little for consistency and is not defeated when he finds himself involved in self-contradiction; for in its activity the mind is not synthetic, without which the sense of inconsistency and its consequent humiliation cannot arise. Reasoned discussion becomes impossible under these conditions, for each new argument, instead of leading to an enlargement of the mental view, arouses only a new elementary act of opposition.

This type passes insensibly into that of the bigot,—in whom, indeed, it has perhaps its first real exemplification among mature persons. The mental reaction of the bigot differs in certain ways from the elementary form of opposition just described. The bigot is averse to change, he distrusts the novel and is hostile to suggestion in general; but his opposition is not the irrational reaction of elementary

contrary suggestion. Though closely allied to the latter in psychological type and resulting in a character which makes a similar impression upon the observer, the bigot's intolerance of new ideas is deliberative and rational. His opposition to suggestion is not that of the stupidly perverse. He does not defy custom simply to enjoy the sense of his own antagonism. His action is guided by criteria which he applied as sincerely and diligently as other men. But the circle within which his consciousness moves is abnormally restricted and no longer subject to modification. His principles of criticism have thus lost vitality and are commonly applied as a system of sectarian formulæ or conventions. Within this narrow sphere he conceives the whole range of truth and wisdom to fall, and all that lies beyond to be, in virtue of that very fact, heretical and false. The bigot's mind, in a word, has crystallized too soon and thus arrested all the later phases of development, inhibiting sympathy and preventing both that receptivity upon which the participation in new truth depends, and that large tolerance for other views which recognizes the possibility of a wider synthesis than the mind itself has yet attained,—a synthesis which shall make these seemingly contradictory forms of interpretation parts of an ultimately harmonious system of truth.

Within the bounds of strictly normal experience, however, this form of elementary reaction is commonly neither general nor persistent. It appears either as a transitory mood or as a characteristic reaction to some specific point of view or individual will. In the first of these two cases the normally consistent mind has suffered momentary disintegration, and instead of responding with either an acceptance or a rational objection, it meets each advance with an obstinate and elementary opposition. In moments of irritation and on occasions of intellectual defeat the normal subject is likely to fall back upon this primitive mode of reaction, and to indulge in petty carping and futile, because inconsistent, faultfinding. The attitude becomes more pronounced as the demand upon physical and mental energies increases; with some persons it is one of the most characteristic accompaniments of nervous fatigue. In the disturbances and exhaustion of disease the type presents still more

striking features, as in the fretfulness and unreasonable perversity of the dyspeptic; but here one passes the limits of normal experience and enters a field where its manifestations are as varied as they are extreme.

In the second of the cases referred to the individual responds normally to the general range of stimuli, but in relation to some particular class the rational reaction fails and is replaced by a persistent and meaningless opposition to all suggestion. This reaction appears most commonly in connection with the attitude of personal hostility to some individual human will, but it arises also as a characteristic response to some particular point of view or order of concepts. For most of us, perhaps, some individual exists the very sight of whom sets our teeth on edge. We dislike his looks or his manners; he annoys us by the way he walks and talks; we resent his opinions, and if we hear him express approval of a point of view we have ourselves adopted in the past, it is enough to turn us against it. His errors are regarded as deliberate sins, and under the most casual attitude we spy some hidden perversity. Nothing he does escapes our condemnation, and he has only to assume a point of view or express an opinion to arouse our opposition. This attitude most commonly appears when some form of intense personal rivalry is involved, as in the jealousies of a lover; but it extends also to all classes of opponents, social, political, religious. One person can see nothing good in Impressionism in art; another in political Socialism, or in Protection or Free Silver in economics; another in Realism or Empiricism, in Hegelianism or Hedonism in philosophy. For one everything that Bismarck did, or Thiers, or Gladstone, or Jefferson, is distrusted; no motive is above suspicion and every attitude is a political ruse or a personal pose. Every one of us acknowledges such irrational prejudices when they appear as momentary whims, but few can see that their lives show systematic misconstructions of this kind issuing in permanent antipathies which render the individual incapable of any full and impartial apprehension of the facts in question. In these forms of prejudice lie the beginnings of those dread perversions in the pathological subject which we call delusions of persecution.

The whole process of conscious education assumes the maintenance of a proper balance between these two tendencies in the individual. The lack of the second produces slavish subserviency to tradition and to public opinion, and an absence of self-reliance. The lack of the first tends to obstinacy, stupid bigotry, and the loss of that measure of adaptability upon the existence of which society itself depends. According as the one trait or the other prevails in individual character do men fall into two general classes, the intellectually dependent and the self-assertive. In the former it seems as if the sense of self-reality were abnormally weak, and that to feel secure of themselves in any experience such persons needed the support of the whole body social. If a thing is not generally believed it cannot be true, they reason; if everybody does not do it, it must be wrong; out of the fashion is out of the world.

The distinction here drawn is psychological, not social. It is scarcely proper to call this class of men conservative as opposed to liberal. The conservative may act upon a reflection as critical and comprehensive as that of the radical. The opposition is rather that between the free-thinker and the intellectually dependent, between the autonomous self and the mental parasite. The one relies on the institution and is content to live within its forms; the other must judge for himself, and will live his own life at all hazards. The dependent mind seeks an authoritative will upon which to rely; the free-thinker assumes both the advantages and the dangers which are associated with the function of individual judgment. The first advantage is, perhaps, that immediate satisfaction which the act of self-assertion affords. If one eat of the tree of the knowledge of good and evil, one is raised to equality with the gods. The satisfaction may be illusive, but it is far from spurious; and not even the disaster which follows serious mistake can wholly take it away. The second and more important aspect is its bearing upon the progress of the race. Advance can proceed only through variation. Modification in a definite direction only is progress, but if variation be spontaneous rather than controllable, then the very condition of advance involves the possibility of retrogression and disintegration as well as of

progress and synthesis. Free variation, liberty of individual thought and action is an evil for minds which fall below the level of their time in social adaptability, for in them the departure from prescribed modes will be in the direction of anti-social or asocial thought and action. The mind that insists upon solving its problems in its own individual way must take the peril of its action upon itself. From the point of view of society the safeguard against the dangers of free variation in the individual lies in the whole conservative force of established traditions and institutional forms of life, and in the rationality of man in the midst of his variations, a rationality which enables him to see the social values of the many variations which appear, and to bring his weight to bear in favor of those which represent an advance upon the past and to suppress and eliminate those which vary in any other direction.

These typical attitudes are exemplified in many classifications of men into parties and sects. The division of the Christian Church in the Middle Ages into Protestant and Roman Catholic branches involved a distinction of this kind. The Lutheran movement was a protest against the absorption of the activity of interpretation and judgment by the institution; and an assertion that this function should inhere in the individual, in so far as matters of faith and conduct were concerned. Those who opposed them and sought the maintenance of ecclesiastical supremacy virtually asserted the superior normality of the institution as over against the individual. The institution here as elsewhere represents the long result of social experimentation, and the system of belief and conduct for which it stands is more serviceable than anything that can be expected from free individual reaction. This branch of the church, therefore, strove for the maintenance of institutional authority and the functions of a sacerdotal class.

The immediate satisfaction of volitional renunciation and dependence is no less positive and intense than that of self-assertion and spiritual adventure. Mental suspense or doubt is a state of intrinsic distress as well as an arrest of practical activity; and every soul which has been harassed by spiritual strife knows the sweetness of a final decision,

whether attained through reflection or accepted from an authoritative will. Every normal and effective life rests upon a system of assured decisions, and the permanency of institutional human life is based upon the body of definite and characteristic conceptions, whether practical or theoretical, which it offers to the individual as a foundation upon which his will may rest and life proceed.

Thus in individual reflection and in institutional life alike both of these constituents of reaction find place. The sane consciousness is that which is grounded in habit and organic memory, but which also expresses itself through the free utilization of past experience as plastic materials for the realization of ideal purposes. So, also, the rational social institution is that which is based upon tradition and reflects the substance of a people's history, but which, at the same time, is continuously modified to meet the changing needs of those who live under it. And one who is curious may trace in the more permanent and complex features of institutional life a series of individual modifications and specific defects which form the analogue, not only of the normal variations in suggestibility which have here been described, but also of its aberrations in the pathological subject.

ABSTRACTS

UEBER CHOREA INFEKTIOSA UND CHOREA HYSTERIA. By K. Wendenburg, *Monatsschrift für Psychiatrie und Neurologie*. September-October, 1910. B. XXVIII. H. 3, 4.

THE author discusses first the simple form of chorea and notes the views of many authors as to the etiology and gives abstracts of three cases in which the chorea began two or three years after an attack of articular rheumatism. Two cases tend to confirm Wollenberg's notion that heredity has a certain influence on the duration of the disease. Psychic traumata are said to be responsible for a certain number of cases.

Paralysis and paresis of various muscle groups may occur in the course of the disease; but while these are comparatively rare, a muscular hypotonia is frequently found.

According to Forster the movement defects consist of two components, a spontaneous movement, which is a clonic contraction of a muscle or of a muscle group, and a defective co-ordination. The choreatic movement is differentiated from other contractions in that at the moment of contraction only one muscle or muscle group is transitorily involved while the antagonists are allowed to expand.

In severe cases it is impossible to test the sensibility, but in mild cases movement and pain were always normal. From his own observations the author finds that in the uncomplicated chorea there is neither an increase nor decrease in the reflexes.

As yet there is no specific treatment for chorea. The patients are often scrofulous, anemic, and of a delicate constitution, and the mortality is two or three per cent. The treatment consists in rest in bed, daily alcohol rubs, abundant, easily digested food, and fresh air; arsenic and the bromides are used and in extreme cases hyoscin or duboisin is given hypodermically to produce sleep.

The author also gives a number of cases in which the muscular contractions are similar to those found in infectious chorea, but which are differentiated from it by the etiology, the location, and course of the contractions and by sensibility defects and motor defects. In five of his cases a psychic trauma was at the bottom of the trouble, four cases suffered from physical trauma, which in three instances was accompanied by a strong emotion; generally one can say that physical trauma and shock play a much greater part in the etiology of hysterical chorea than they do in infectious variety. In the hysterical form the percentage of adults is greater

than in the infectious form, which is more common in children from seven to thirteen years of age.

In the hysterical form unilateral hyp- and an-æsthesias, and hyp- and an-algesias were frequently found. Usually the sensibility was more disturbed on the side on which the choreatic movements were most pronounced. Several cases showed hallucinations of sight and hearing. Contractures of the joints of the hand and the foot were found, paralysis of the eyelids, the hypoglossus nerve, and the face: mutism and dysphagia, blepharoclonus, hysterical ptosis, *astasia trepidante* and saltatory reflex spasm were also found. Two patients suffered from an hysterical hyperhidrosis and tachycardia.

Frequently the patients showed increased affective and reflex irritability and changes in mood. The motility defects showed a much closer connection with the psychic than in the infectious form. Under this influence of attention the movements increased to a very great degree. All the patients were susceptible to suggestion to a great degree and sometimes they could be cured by this means in one interview. Suggestion has a certain influence in the infectious form, but never so much as in the hysterical.

The hysterical chorea is a disease of perception, of the conscious processes in the cerebrum, while the chorea minor depends upon the participation of the cerebellum which cuts out unconscious movement perceptions. In the hysterical form the spontaneous movement in one part tends to suppress that in another, while in the genuine chorea the stimulus radiates to other muscle groups and tends to call forth other movements. The hysterical form also is more frequently a hemi-chorea, but one cannot always differentiate the two forms by the location of the contraction.

The author gives an abundant list of the literature on both forms of the disease.

CHARLES RICKSHER

CONTRIBUTIONS TO THE KNOWLEDGE OF HYSTERICAL TWILIGHT STATES.—On a peculiar form running the course of a psychical puerilism. (*Beitrage zur Kenntniss des hysterischen Dammerzustandes*.—*Ueber eine eigenartige, unter dem Bilde eines psychischen "Puerilismus" verlaufende Form.*) By Straussler. *Jahrb. f. Psychiatrie u. Neurol.* Band XXXII, Heft 1 and 2, S. I.

STRAUSSLER has in the last three years had under his observation forty-eight cases of hysterical twilight states, mostly in soldiers under punishment. In the present article, 107 pages

long, he gives an interesting study of seven cases that were characterized by some peculiar features. The chief of these were an extensive retrograde amnesia, combined with a regression of the personality to a period of childhood; the behavior and general knowledge of the patient accords with the supposed age that he seems to have. The type is, of course, far from novel. Numerous cases of the kind have been recorded in the past thirty years and even earlier, particularly in the French literature. Indeed Straussler applies to them the name devised by Dupre, mental puerilism, though, strange to say, he does not mention the older one used by Pitres, *ecmnesia*. He considers that the condition is a true hysterical psychosis; the differential diagnosis between it and the catatonic variety of dementia precox is often extremely difficult to make. In a short discussion of the double personality aspect of the condition he comes to the conclusion that the break between the two personalities is never an absolutely complete one, and further that the secondary personality always shows evidences of its pathological nature; that is to say, that the imitation of the childhood state is not quite perfect. The condition in its nature is extremely closely allied to the Ganzer syndrome; in fact, as the patient recovers he shows the typical "*Vorbeireden*" of this condition. It is known that the psychological meaning of Ganzerism is that the patient's desire not to know brings about a state in which he actually does not know. Straussler offers a similar explanation for the mental puerilism. Observing that the few remaining memories from the present (in the secondary state) were always of a pleasant nature, and that the ones that were hardest to recover were unpleasant ones, he concludes that the process is brought about as follows: in his desire to forget (repress) the thoughts of the present — concerning the punishment, etc., — the patient goes too far. In order to make sure of forgetting all these he forgets a large portion of his present life; in his delirium he flies away to happier days. To quote the author, "The patient, as a contrast to his present existence, seeks refuge in the childhood time with his father and mother."

Although the author is evidently quite uninfluenced by Freud's work, we have here a conclusion almost identical with Freud's "flight into disease"; both Straussler and Freud seek for a motive in the hysterical malady, and both find it in the endeavor to replace the unhappy present by an imaginary one, of a kind previously known to them in childhood. In the reviewer's opinion Straussler's conclusion that the motive to escape from the disagreeable present, with its punishment, is perfectly correct, but the explanation is not complete. We next want to know why only some hysterics that are

undergoing punishment develop this special class of symptom. According to the psychoanalytic school the explanation is that in these cases there are deeper wishes, dating from childhood, of such a kind that the recent one can become associated with them. The older desires reinforce the recent ones, and the latter find an outlet in a direction dictated by the former. The reviewer published recently an analysis of this kind of case in which the nature of the older childhood wishes was made manifest (*Amer. Journ. of Insanity*, Oct., 1910, p. 279). Here, as elsewhere, therefore, psychoanalysis supplements the customary explanations by providing a fuller and deeper understanding of the ultimate origin of the symptoms.

ERNEST JONES

ON CERTAIN ELECTRICAL PROCESSES IN THE HUMAN BODY AND THEIR RELATION TO EMOTIONAL REACTIONS. *F. L. Wells and A. Forbes. Archives of Psychology.* March, 1911.

THIS monograph is devoted to experiments conducted with the view of developing the best available method of applying the psycho-galvanic reflex in the study of emotional reactions in normal individuals and in various psychoses. The work was divided into three parts. (1), an investigation of the physiological causes of the galvanometric deflections; (2), a study of the sources of error arising from physical causes and of the methods of eliminating these errors; (3), a testing of the value of the deflections as indicators of emotion. The apparatus used was the D'Arsonval galvanometer, while the electrodes were constructed of glass tubes, the subject's middle finger being immersed in each tube. After a review of some recent investigations with the galvanometer, the authors point out that emotional reactions are accompanied both by changes in difference of potential between the immersed fingers and by changes in the resistance of the body. Concerning the physiological basis of the electric phenomenon, they do not believe that action currents in voluntary muscles are a probable cause. It appears from their experiments that the sweat glands are the chief source of the galvanometric deflections as the resistance changes after administration of atropin, a drug which paralyzes the sweat glands, and has comparatively little effect on the vasomotor system, caused a marked diminution of the deflections.

The experiments with atropin seem to indicate that sweat gland activity is the most important factor in causing the galvanometric deflections and that muscular or vasomotor activities play

but a small part. The sources of error were dependent mostly on physical complications, such as unconscious motions of the fingers, although the changes in the magnitude of the deflections under these conditions were slight. When the fingers were isolated by rubber cots, no deflections took place. Changes in the temperature of the immersion fluid by too long immersion of the fingers, also caused errors.

Concerning the intensity of emotional response in the association tests in reference to the deflections, the authors believe that we must possess introspective data concerning the intensity of feeling aroused in order to make an intelligent comparison. The method used was to have the subject respond to the grade of emotional reaction as soon as possible after the test word. This introspection was assigned to four groups, and was indicated either as strongly emotional, rather emotional, unemotional, and deprived of emotion. Experiments showed that a fairly close relationship existed between the intensity of emotional reaction and the simultaneous electrical disturbances. Listening to phonograph records from well-known operas likewise caused galvanometric deflections, which were parallel to either the light or the more stirring portions of the records.

In the examinations of mental diseases, cases of senile dementia showed practically no deflections. In one case of katatonic stupor, although the subject showed no outward sign of hearing or understanding questions, definite deflections could be noted. In a second case of katatonic stupor, the deflections were the same to indifferent questions as to questions having a personal significance.

I. H. CORIAT

REVIEWS

THE ESSENTIALS OF CHARACTER. By Edward O. Sisson, Professor of Education, The University of Washington. New York, The Macmillan Company, 1910, pp. x, 214.

THE motif of this book seems to be well expressed in the Preface: "the dynamic and organic nature of character; that character springs from native impulses and tendencies in the child, which are full of power, of push, and thrust, and make themselves felt; out of these original tendencies, by organization and co-ordination and by enlightenment, character arises through gradual and often imperceptible processes." The mode of development of this theme may be readily seen from the chapter titles, which are as follows: Native Tendencies; the Treatment of Native Tendencies; Disposition; Habits; Tastes; the Personal Ideal; Conscience; the Social Ideal; Strength of Character; Religion; and Notes on the Cultivation of Character. The bibliography at each chapter's end and the list of "Suggested Readings" at the end of the book are of distinct use to many who wish to read in this direction.

It is obvious that the volume covers, so far as it can and be small, all phases of the subject it discusses; one is apt to think indeed that its very brevity is its chief defect. For example, the first chapter (Native Tendencies) undoubtedly the strongest in the book, treats of "Bodily Activity, Sense-Hunger, and Curiosity, Suggestibility, Tastes, and Appreciation, Self-Assertion, Love, Joy, Fear, the Growing-up Impulse, Love of Approbation,"—several of which topics one would like to see developed far by a physiologist not unaware that the individual is mind as well as body. In general, Dr. Sisson has, even in this chapter, paid too little attention to the physical basis of character, although what he has said in a general way is emphatic and withal scientific. There are, however, such possibilities for education latent in a full psycho-physiologic treatise, for example, on the sympathetic nervous system, and that which it controls, that one can hardly help grieving that another opportunity has been ignored! If, for example, a child, in spite of what we may call a gluttonous sympathetic, develops, as he grows up, a habit of eating in accord with "denial" and hygiene, it means much more for his character than any possible relation to gluttony could explain—and physiology is on the verge of telling us *why* in terms of muscle and gland and nerve. And it is just this kind of exact physiology that educational science needs.

This book, then, contains nothing technical and little psychology, but it is sound and up to date, both in doctrine and in fact — in other words, the present reviewer agrees with Professor Sisson! It is certainly a suggestive book for any thoughtful adolescent or adult. It is an excellent volume for the parents of young children, and for such teachers (tutors, governesses, etc.) as come in close and prolonged contact with their pupil's evolving minds, and do their best to influence them for good. The chapter entitled, "The Personal Ideal," is to be recommended especially as a gem of wisdom thoroughly in accord with the progressive spirit of our educational ideals at this present day.

The book ends with a good index of about two hundred and fifty items, completing a volume sure to make a distinct addition to a large number of family and of educational libraries.

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ZENTRALBLATT FÜR PSYCHOANALYSE

HEFT 3

S. 81. *Jung*. EIN BEITRAG ZUR PSYCHOLOGIE DES GERUCHTES. A school girl had been dismissed for spreading an unpleasant story about her teacher (a man). Jung had the opportunity of investigating the occurrence, and found that it had started by the girl merely relating to a friend an innocent dream about the teacher. This was retold several times, and gained each time in the telling, until at last it became an openly sexual story. The different versions were closely compared, and the phases in the evolution studied. The psychoanalytic interpretations of the original dream closely corresponded with the final story as told, so that the untutored minds had intuitively divined the hidden meaning of the dream and had interpreted the detailed symbolism of it with remarkable correctness.

S. 91. *Freud*. UEBER "WILDE" PSYCHOANALYSE. This is a highly instructive article on the effects of blind attempts to apply psychoanalysis on the part of those who have only an ill-digested and vague knowledge of the subject. The text is a case of hysteria in a lady of about forty-seven, who came to Freud to find out if what her doctor had told her was true, namely, that according to Freud her malady could only be cured by her assuming sexual relations. Freud discusses the unfortunate misunderstanding

of the doctor, and pointedly asks, if neuroses were curable in this simple fashion, what would be the function of psychoanalytic treatment. A number of similar practical matters are also gone into; the article needs to be carefully read in the original.

S. 96. *Ernest Jones*. BEITRAG ZUR SYMBOLIK IM ALLTAG. An analysis of a supposedly harmless and meaningless casual action, which proved on investigation, however, to have been unconsciously determined by the deepest motives in the person's character. The analysis threw an unexpectedly extensive light onto the most hidden part of his mental life.

S. 98. *Sadger*. ZUM VERSTANDNIS DER HYPNOSE UND DES HYSTERISCHEN DELIRS. A report of a patient who insisted on being hypnotized, the motive being, as is usual in such cases, a masochistic desire. In hypnosis he went through a deliriously acted scene, the analysis of which is given in detail.

S. 102. *Stekel*. ZUR SYMBOLIK DER MUTTERLEIBSPHANTASIE. From a patient with many birth phantasies, and in one of whose dreams a railway car symbolized the mother's womb, Stekel obtained the account of a conscious phantasy of the kind, a quite rare occurrence. Other matters concerning birth and religious rebirth are discussed.

S. 103. *Alfred Adler*. EIN ERLOGENER TRAUM. An interesting study of the motives with which patients lie to their doctor. Adler traces the habit mainly to the unconscious desire to adopt a masculine, superior position in regard to the doctor, and not to give in to him.

S. 109. *Stekel*. WARUM SIE DEN EIGENEN NAMEN HASSEN. Stekel gives instances of how the hate of their own name by patients was derived from hostility to the person who gave them the name, the father.

S. 109. *Stekel*. EIN DURCHSICHTIGES BEISPIEL VON VERLEGEN. Explanation of an example of unconscious mislaying of money.

S. 109. *Otto Rank*. EIN BEISPIEL VON POETISCHER VERWERTUNG DES VERSPECHENS. Rank quotes a pretty instance of lapsus linguae from the Merchant of Venice, which shows how Shakespeare had realized the significance of the mechanism of this.

HEFT 4

S. 137. *J. J. Putnam*. UEBER AETIOLOGIE UND BEHANDLUNG DER PSYCHONEUROSEN. A translation of Dr. Putnam's paper read before the American Neurological Association, 1910 (published in the Journal of Nervous and Mental Diseases, Nov., 1910).

S. 155. *Nepalleck*. ANALYSE EINER SCHEINBAR SINNLOSEN INFANTILEN OBSESSION. A boy of ten had the curious obsession that a brush-hair that had got stuck on the wall was in some way connected with the possibility of his dead mother returning to life. A detailed analysis, here related, showed the hidden sense of the apparent absurdity, and fully explained it.

S. 158. *A. A. Brill*. EIN FALL VON PERIODISCHER DEPRESSION PSYCHOGENEN URSPRUNGS. A translation of the analysis published in the JOURNAL OF ABNORMAL PSYCHOLOGY, June, 1910. Brill thinks it probable that many cases of so-called melancholia are really cases of curable anxiety-hysteria.

S. 165. *Witt*. EIN BEITRAG ZUM THEMA "SEXUELLE EINDRUCKE BEIM KINDE." A study of childhood sexual life, on the basis of the poet Ganghofer's description of his own childhood.

S. 166. *Ernest Jones*. UNBEWUSSTE WAHL WISSENSCHAFTLICHER UNTERSUCHUNGEN. Two instances in which the choice of subject for scientific research had been determined by unconscious complexes.

S. 167. *Otto Rank*. BEISPIEL EINES VERKAPPTEN OEDIPUS-TRAUMES. This is a very clearly analyzed and convincing example of a disguised Oedipus complex in dream life. The two components (1) jealousy of the mother, and (2) love for the father (the patient was a woman) came to expression in two separate dreams of successive nights.

S. 171. *Stekel*. AUSZUGE AUS DER ALTEREN LITERATUR. Mostly quotations from Guttzeit's Dreissig Jahre Praxis, 1873, containing interesting views on hysteria, etc.

S. 173. *Juliusburger*. WEITERES VON SCHOPENHAUER. A discussion of Schopenhauer's views on the part played by sexuality in various mental processes.

S. 174. *Alfred Adler*. UEBER MANNLICHE EINSTELLUNG BEI WEIBLICHEN NEUROTIKERN. Adler gives here a further contribution on his favorite theme of the masculine ambitions of female neurotics.

ERNEST JONES

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A STUDY IN DELUSION FORMATION

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WE put on record here mainly two cases of rapidly occurring delusion formation, with unusually early and satisfactory terminations for such conditions.

The cases are, we believe, interesting and suggestive, and we consider that they illustrate the value of such a position as Dr. Adolf Meyer's, when he says that "Psychopathology needs perspectives rather than definitions, lines of enquiry rather than *a priori* clipping of the object of investigation, and a veritable feeling of sanctity of the individual case in all its manifestations."¹

They illustrate too the preponderating influence of emotion rather than of intellect in the production of such conditions.

Further, we have not attempted to classify them, preferring to consider them as illustrative of psychopathological conditions rather than as definite hysterical or paranoid cases.

We have suppressed names and omitted references likely to identify the patients.

One evening in the autumn of 1900 I was called to the country to see a single lady, aged about forty, with whom I

¹ The Relation of Emotional and Intellectual Functions in Paranoia and Obsessions. Adolf Meyer, Psychological Bulletin, Vol. III.

had been well acquainted for several years, and knew as a healthy, energetic woman, who successfully filled a difficult position as the head of a large establishment involving considerable social work and influence. She had been taken ill the morning of that day with, as I was informed, some sort of "cerebral attack." On my arrival I gathered from the statements of her local medical attendant that, when he first saw her, her appearance and manner, as well as the sudden development of a certain pronounced delusion, gave him the impression that there had been some sort of mental seizure or shock and possibly related to menstruation, which had just begun. As to this latter point I subsequently ascertained that generally for a week before it came on she was "nervous and depressed—conscious of a weight over body and mind."

I found her in bed with flushed face, but otherwise free from any indication of special bodily disturbance. The prominent feature in her case was the presence of a firmly held delusion that she was the wife of a well-known gentleman in the district, a delusion which she had suddenly developed, apparently, as the direct and immediate result of the morning's upset, a delusion which had none of the usual foundations based on suitability and previous relations, such as ordinarily might lead to expectations of a proposal of marriage.

Briefly, the history of the attack was that after several days of very hard work, in an always busy and full life, marked by a good many train journeys and not a little mental strain, she arrived the previous evening at the country house where I saw her. She was then, though overfatigued, quite sound mentally, as shown by feelings and conduct, and in her letters written not many hours before this attack. Next morning she asked a maid who entered her room with an early cup of tea to bring her her breakfast in bed, as she "felt very tired"; before this could be done she was seen to go into a neighboring bathroom, where she remained so long that the household became alarmed, but while they were considering what should be done, she came out of it, looking so unwell and talking so strangely that the doctor was at once sent for.

At my visit I gathered that her delusion was, if anything, more definite and more freely expressed than it had been in the morning. Apart from this and the presence of some undue excitement, as evidenced in manner and speech, she was quite coherent and rational in her conversation. She knew me, expressed no surprise at my visit, and answered my questions readily and intelligently, but could tell me nothing about the beginning of her illness. She had no recollection whatever of the incidents connected with her illness. I found that there was a retrograde amnesia, as she had no recollection of having written to me and also of having seen and consulted me about a friend a few days before. She remembered nothing about arriving the previous day at the house I found her in. On arrival at the station on that occasion she had been informed that there had been some trouble with one of the horses of the carriage which went for her — it had been restive and had got one of its feet over a trace, but she had no recollection of this when I asked her about it. The amnesia was, I found, complete for the incidents of that day, of the day of her arrival, and for several days before. I came to the conclusion that the amnesia and delusion of being married were the result of a dissociation caused, primarily, by a toxemia, the product of fatigue and menstrual disturbance. I sought at once to verify my opinion as to the amnesia by seeking to get at some of her dissociated memories by the method of distraction or hypnoidization of Dr. Boris Sidis. I first asked her in an ordinary way as to what had happened to her that morning in the bathroom, but she only looked puzzled, and asked me what I meant, as she knew nothing of any bathroom experience, nor of any experience connected with her illness. I next asked about the carriage incident referred to above, but she knew nothing whatever about it. I then asked her local medical attendant who was present to ply her with questions bearing on her delusion, while I kept her eyes closed with my hand over them, then in the course of his questions and her answers, I said to her in a whisper, "What happened to you in the bathroom this morning?" At once came the reply, "Oh, I was very ill," but I could get no more. Again in a few minutes, under the

same conditions, I asked her about the carriage incident, when immediately the reply came, but in a confused fragmentary way, "Horse, foot, trace," showing clearly, however, that she remembered the incident as it had been told to her at the time. I then removed my hand, my colleague stopped his questions, and I asked her again as to the bathroom and carriage incidents, but she knew nothing about them, and expressed surprise at my asking such questions. My prognosis, considering the character and sudden onset of the condition, was that she would get better and probably fairly soon. Her history, however, for the next few weeks did not bear out this opinion. After a few days, her mental condition not improving, I advised her removal from the neighborhood, and its associations with Mr. Y., whose wife she supposed herself to be, to a quiet country home near me, with good nursing and under the regular care of a medical friend of mine, who had experience of mental cases, and where I saw her at regular intervals.

For some weeks after this her delusions became apparently more and more fixed, so much so that she addressed letters and telegrams to this gentleman's relations in the capacity and under the signature of his wife, and on one occasion when out walking with her nurse she suddenly rushed forward to an approaching carriage and introduced herself to its occupant as Mrs. Y. Yet judging from the way she spoke to a near relative who visited her about three weeks after the onset of the disturbance she had glimpses of insight into her condition. She had been referring to certain arrangements affecting employees in the establishment of which she had been the acting head, and for which she was responsible, and added in a reminiscent way: "But I find it so strange to be talking about them all when I am not with them. I have been a long time in charge without a break, it is — years since I first went, on an autumn day like this." And she went on to say: "I wonder when I will come out of this strange dream. I wonder if I was thankful enough when I could dress for dinner every evening strong and well. Do you think we are ever thankful enough for health? I feel as if my vitality were all away." Her acceptance of the nursing and medical restraints imposed on

her throughout her illness indicated some recognition that she was in an abnormal condition of some kind. But notwithstanding the above striking phrases which showed a more or less successful attempt at reassociation of her dissociated mental states, her ordinary conversation and conduct showed, if anything, only a more complete organization of her delusions. She had indeed by this time carried her delusions as to her married state a step further by believing herself to be the mother of twins. This delusion also arose suddenly and as the result of a dream which she had one night about the third week of her illness. Vivid dreams leading to temporary delusional states were occasionally reported; one was when she suddenly awoke and demanded to be dressed for a ball, as she had "promised to take some young people, and must be off at once." This notion, which from its character never became fixed, was quite in keeping with her past social experience, when she acted at balls and similar entertainments as a chaperone to young ladies.

A few days after she had spoken to her relative in the striking way above described, I saw her in consultation with a distinguished alienist. She talked to us in her old bright way familiar to me before her illness, and became much interested in discussing with this gentleman the more notable residents and characters in a watering place, with which they both happened to be familiar. She cleverly hit off and criticized the peculiarities and foibles of some of its old residents, displaying no evidence of mental disturbances or enfeeblement nor of the slight mental excitement and restlessness which had marked the first fortnight of her illness. But her marriage was still to her a fact, and when he suddenly asked, "Where are the babies?" she at once answered, "Upstairs with their nurse," a reply which showed how completely the dominant ideas excluded all others antagonistic to them from her attention, the upstairs in question, too, belonged to a separate house, and had a different entrance from the one she occupied. Naturally and notwithstanding my emphasis on the points differentiating the clinical history of the case from an ordinary one of delusional insanity, this gentleman's opinion was that it was a case of that kind, and that her delusions were becoming so well organized that

recovery was problematical. Yet even at that time improvement had really begun, not as shown only by the fact that she had, as above recorded, an occasional glimpse of insight into her condition, but that she was beginning to sleep better, was less talkative and excitable in conduct, and was not speaking much about Mr. Y. or his relatives, as had been her habit during the previous period of her illness.

Her mental treatment was from the first directed to the persistent discouragement of every association likely to encourage her morbid ideas, while her general health was promoted by baths, frictions, exercise in the open air, and careful attention to her digestive functions. About a week or so after the consultation above referred to an improvement could be observed, which very gradually and steadily went on. At no time were there any sudden or striking evidences of the reassociation of her dissociated states, or of insight into her condition on her part, such as was noted at the visit of her relative and referred to above. Six weeks after the onset of the attack I was able to report her improvement to her friends, and about the same time she was again visited by her relative, who after the visit wrote to me, "I have the feeling that she is gradually awakening out of this strange dream." Two months from the beginning of the attack I was able to report that she was very well, only quieter in manner than was her habit before her illness. She has remained very well ever since, and fills efficiently a useful and somewhat onerous position, though free from the excessive strain and worry of the one she occupied before her illness.

This patient had been a bright, intelligent, and most energetic woman, very sane in her personal and general outlook, who worked hard and well in a variety of social and benevolent causes where she had led as well as worked, and during my considerable acquaintanceship with her never gave me the impression of being in any way mentally unstable or even hysterical, yet the clinical facts above described point to a susceptibility to mental dissociation, even though it had never, so far as could be ascertained, occurred in her former history. I learned subsequent to her recovery that there were some facts in her family history indicating hereditary predisposition, but, however important this may

be in its place, it may be disregarded here, where what we are most concerned with is the cause and nature of the mental dissociation or dissolution which took place, or in other words, what were the forces which toppled the structure over, rather than the liability to being toppled over, which liability may in most cases be assumed.

Her life had been for many years one of strain under conditions of dependence, and we know that she longed greatly to escape from this, and but a few weeks before her illness writing to a friend about her position, she expressed her desire for "a home of her own." This was intensified by her knowledge that her social surroundings hindered rather than helped towards the consummation of this very natural craving for a home, independence, and a less strenuous life, which was combined with the normal erotic desire, normal because "it is everywhere assumed as necessary and inevitable, and is not like other desires a matter of taste and disposition. For it is the desire which constitutes the nature of man. In conflict with it no motive is so strong that it would be certain of victory."¹ She was at this time, when in this condition of emotional tension, thrown occasionally into the society of Mr. Y. under conditions which made him temporarily an unusually interesting personality, not only to her but to others, with the very natural result that he became the subject of her day dreams, the convenient and suitable object of the hopes and desires referred to. There was here no question of any mutual relations involving legitimate expectations on her part, as Mr. Y. was ignorant of the whole affair. Nor, until her illness, did she show any evidence in her walk and conversation of her being so deeply affected as she really was. I happened to discuss this gentleman with her a few days before her attack, when she showed no apparent evidence of undue interest in him. But why should this normal restraint break down and all this intense feeling, natural enough, however inexpedient, lead her to delusions, which appear suddenly instead of growing more or less gradually, as in paranoid states generally? The condition

¹ *The World as Will and Idea*, Schopenhauer. Translated by Halden and Kemp, Cap. 42.

was not reached through the gradual development of dominant or imperative ideas so absorbing the attention as to exclude the realities as is usual, and in particular with this kind of delusion in women, a common enough one in asylums. This was no case of this kind, her emotional complexes, born of deep-seated and universal instincts, were held in check, did not exclude the realities of her life and position, nor even induce hysterical effects of the more usual type, so that something more was required to determine the marked dissociation which took place, with its consequent amnesia, transformation of her dreams into, for her, realities and satisfaction of her cravings. We get this something more in the temporary bodily illness which immediately preceded the mental disturbance, and which in the state of abstraction induced by me she referred to in the words, "Oh, I was very ill," and which to those about her gave the impression that she had had a fit of some kind when in the bathroom. Was it then an hysterical fit, and can we regard the morbid mental condition above described as an hysterical or somnambulant fugue, of which there are so many interesting cases on record? This is a view, too, which is suggested by her own remark of being in "a strange dream." The relation to such a condition is obvious enough, we have little doubt that in the matter of psychogenesis a delusion formation of this kind is closely allied to the varying and fluctuating bodily and mental perversions which we describe as hysterical. But from a clinical point of view the symptoms were more paranoid than hysterical. She was the subject of delusional insanity to the consultant, who saw her with me, and to her regular medical attendants during her illness, and in harmony with that view she acted the social part of a wife with an absent husband, consistently and continuously for weeks, so far as the restraints she was subjected to permitted her, and at the same time she discussed rationally and acutely those incidents of her past life, and of her daily life that were not related to, or were outside the influence of her delusions, while neither before nor since has there been any hysterical symptom observed in her case. The amnesia which was functional may be regarded as an hysterical symptom, but more correctly it should be termed a symptom

of mental dissociation, in the words of Janet, "a defect in the actual synthesis of the psychological elements,"¹ and we hold that it is an important factor in the beginnings, at least of all delusion formation, and this, too, notwithstanding the fact that amnesia is not usually considered a feature of paranoid conditions. This view does not take us very far, nor is it very new. In this connection it is interesting to note that long before the days of the neurone theory we get from a metaphysician the same idea as to the influence of amnesia in the causation of mental unsoundness. Schopenhauer says, "The health of the mind properly consists in healthy recollection"; and discussing the main process at the origin of madness and its converse, he says, "In both processes, however, what is essential to madness remains the same, the impossibility of a uniformly connected recollection, such as is the basis of our healthy and rational reflection." He clearly distinguishes between the psychic and physical causes of insanity, and his details of his processes at the root of the former are suggestive of present day problems of psychopathology, particularly as to the causes of dissociation of the kind here described. From a descriptive point of view the condition could not be better described than where he says, "Such patients cling convulsively to the thought they have grasped, so that no other, at least none opposed to it, can arise." As indicated, he gives, too, all due place to the physical as well as the psychical causes of insanity and their interdependence: "Yet the two causes of madness will generally partake of each other, particularly the psychical of the physical. It is the same with suicide, which is rarely brought about by an external occasion alone, but a certain physical discomfort lies at its foundation."² This is our position here where we recognize the physical side of the disturbance which ushered in the amnesia and delusional condition. It is scarcely profitable to go beyond the statement that it was autotoxic in origin, and was probably migrainous in character. It was certainly not epileptic, as she was conscious of "being very ill," nor were the

¹ Pierre Janet, *Etat Mental des Hysteriques*.

² Schopenhauer, *The World as Will and Idea*, Cap. 32, p. 170, also Book III, p. 250.

symptoms post-epileptic in type. It arose suddenly and passed off quickly, as many migrainous attacks do. No doubt a result of this kind is unusual in such conditions, though delirious states and consequently marked dissociation conditions do occur in them. The name, however, is of little consequence. We do know, as has been made abundantly clear of late years, that even where the physical conditions, toxic or circulatory, anabolic or catabolic, are of the slightest, mental dissociation may take place as in hysterical and somnambulatory states. This is seen even in such chronic forms of mental disease as "Folie Circulaire." In a case of this kind, where the alternating states were unusually short in duration, we have known of the patient saying, "I'm off," and off she went into a state of acute mental excitement,—an immediate shunt into a striking change of personality. There were in this case as in Miss X.'s case, and in hysterical states generally, potent emotional complexes at work, which might be held as sufficiently strong to determine of themselves a dissociation of this kind, but the initiatory process, the spark which caused the explosion, was toxic, and we were personally satisfied that such toxic conditions existed in this case of Folie Circulaire, and believe it operates in all cases of this kind, and that on the passing of such autotoxic conditions the normal synthesis of the dissociated states tends to take place, though once initiated the dissociation may go on for an indefinite period; and we know that sensory-motor, as well as mental disturbances of various kinds, can be essentially psychogenic. "Mind, like every other function, can demoralize and undermine itself and its organ and the entire biological economy."¹

In this paper we are mainly concerned to illustrate this dynamic aspect of processes, which we term mental to distinguish them from recognized physical states, and also that without physical disturbances, however slight, such states would come into being with difficulty or not at all. We would distinguish in our use of the word toxic between processes of the evanescent kind, anabolic or catabolic, which do little more than liberate the psycho-dynamic conditions, and tox-

¹ Quoted by Augst. Hoch, in *The Psychogenic Factors in the Development of Psychoses*. Psychological Bulletin, June 15, 1907.

mias of the type of alcoholism, though even here, conflicts, involving more particularly the deep-seated instincts and longings, assert themselves by mental disturbances as much endogenous as exogenous in origin. I would illustrate this by a reference to two cases which have been under my care in the district asylum here. The first was a young lad who was of good intelligence and of fair education. He had threatened and attempted suicide, and was suspicious, and at times had delusions. He had a big head and an awkward walk, the result of early hydrocephalus, and his boyish companions jeered at him and made fun of his big head; this, and his inability to get permanent employment, brought on fits of depression, ideas of unfitness, and desire for suicide. After admission it was noted that his depression came and went with the rise and fall of his blood pressure. We could always measure the ups and downs of his mental condition by the state of his blood pressure. On one occasion he attempted to strangle himself; his blood pressure was at once tested and found to be for him abnormally high. Erythrol tetranitrate quickly reduced it, with the result that he was laughing and singing within twenty-four hours from the time he had been found with a cord round his neck. A course of nitrate in the first instance, followed by work in the open air, permanently reduced his blood pressure and freed him from his depression, his ideas of unfitness, and consequently his desire for suicide. The point here is that his toxemia measured by his blood pressure was never great, his blood tension at its highest measured but 130 m.m. Hg., his normal being 115 m.m. Hg. Yet his depressing emotions based upon painful boyish experiences and ideas of unfitness only dominated completely his mental life when the cerebral conditions associated with a high blood pressure lowered also the resistance to dissociation or, may we say, his "psychic tension."

This is still more forcibly shown in the following case, as it often is in the dreamlike delusional states with amnesia occasionally found in alcoholism. J. M'C., aged forty-nine, was admitted on the ninth of May, 1896. A favorite son, a boy, had been killed in a coal pit a week or so before the patient's admission, and since then patient had been drinking, to

which, he said afterwards, he had been driven by grief. He had no hallucinations, his symptoms did not indeed suggest alcoholism at first; there was marked amnesia for recent events, and he complained of pain and a worrying sensation in his head. He went about as in a dream, constantly saying, "I want my boy," "I'll kill the man who is keeping my boy from me." To questions his usual reply was, "I don't know." That he had lost his boy, and that some man had taken him away from him, appeared to be the only idea in his mind, and for three days he was in a condition of mental distress over the loss of his boy, which was pitiful to see. On the fourth day he seemed to wake up suddenly out of this state, and said his headache was better, talked rationally about his boy, knew that he had been killed, not merely taken away, and maintained that there was some culpability for the boy's death on the part of the man with whom he had been working. He remained for some days longer amnesic as to his own movements from the time his attack began, but was dismissed well nine days after admission.

Five months afterwards he was again admitted for three days, as the result of another drinking bout. On this occasion he had asked to be locked up to prevent him from committing suicide. Again his boy's death filled his mind, and was the subject of his talk; he said he wished to murder the manager of the pit where his boy worked and got killed; that two nights ago he had had a long talk with his boy, who told him all about the manner of his death. A third admission, also for a few days, took place about a year after this, when he talked about meeting the Virgin Mary and his boy, and of hearing him speaking to him. For several years after this whenever he took drink to excess, which was at considerable intervals, he spoke in much the same strain about his boy. He told me the boy came into his thoughts at those times, and on one such occasion he remembered strolling into the graveyard in the hope of meeting his boy, though all the time he knew he was dead.

His first attack occurs when his grief for his much-loved boy is but a few days old; it drives him to drink, with the result that the alcoholic poisoning of his brain acts somewhat

unusually, so that when intelligence and memory are for the time obscured, or when, in Jacksonian phraseology, the dissolution of the higher level mechanisms takes place, there is left the deep-rooted racial instincts which compel to love or sacrifice for the child, which asserts itself in a dominant emotional complex concerning his boy and his loss. The alcoholic clouding of all the cerebral functions leaves him with only the most vague and distressing feelings as to his boy having been taken by some man whom he will kill if he can get hold of him. Such delirium as he had was entirely governed by this complex. In his later attacks, as time deadened his sense of loss, this complex grew less and less potent, so that his delusional ideas about his boy, while still the prominent feature, indeed almost the sole content of his alcoholic delirium, became more and more, as in Miss X.'s case, a reflex of his desires and cravings. He sees his boy with the Virgin Mary; he hears him speak; he goes to the churchyard expecting to meet him, etc. The general clouding or obscuration of mind is less, but the dissociation at the instance of his cravings is more marked, i.e., the psychic factors are more in evidence than the physical or toxic. The toxemia was exogenous, and its effects upon the nervous system lasted for days, intensified in the first attack by the psychic trauma of his son's death; yet contrary to what happens in Miss X.'s case, where the toxemia, largely the product of fatigue, is transient, the delusional state passes off with the passing of the toxemia. The reason for this difference is obvious enough. His dominant mental content is his boy's death and no substitution of a more pleasant idea is possible under the psychic conditions; indeed, only under the clouding of the "higher level mechanisms" is such dissociation as does take place possible. There is no possible gradual growth of pleasant substitutive feelings or ideas, no possible relief, save at the cost of considerable dementia.

This leads us to the description and discussion of our other principal case, where as in Miss X.'s, there was a delusion as to marriage, but where the conditions generally were more paranoid in character and the development, though very acute, apparently due more to psychical

than to physical influences. She was a school teacher who had a few weeks before I saw her, in November, 1909, developed a series of delusions, the most prominent of which was that she had been married a fortnight before to the headmaster of a school in one of our colonies where she had been a teacher. As she had been a year at home, and Mr. B., the gentleman in question, had not been in this country during that time, nor had she had any communication of any kind with him, nor, so far as could I learn, had there been any sentimental or amatory relations with him while she was in the colony, there was still less real foundation for this delusion than in Miss X.'s case.

She was admitted into the Paisley District Asylum with a history of having various delusions, which were referred to in one of the certificates on which she was admitted, as, "She imagines herself to be a person of impure mind, and to be possessed of great wealth. She states, what is not the case, that she was married a fortnight ago, and is going soon with her husband abroad. She has deliberately burned her feet on a hot water bag, in response to a message telling her to do so, in order to purify her mind."

She was in good bodily health, mentally she was apathetic and indifferent to her position and surroundings. Memory and attention were good. She was above the average in intelligence, answered questions readily, giving expression without any reserve to the delusions above referred to. According to her friends she had been a competent teacher, fond of reading good literature, "and most humorous," but cared little for social life, visiting, dancing, etc. She was dissatisfied with her home life, "wanted to see a bit of the world and make money." The result was the going to one of our colonies, where she was well employed, but soon after going took enteric fever, from which she made a slow recovery, marked by a relapse. She later had a good many disappointments as to her position and prospects, and not having the capacity to save money worried over the indifferent pecuniary results of her colonial service. She had one especially unfortunate experience with a companion, another lady teacher, who became pregnant to a headmaster,

and though he ultimately married her, Miss J. entered deeply into the feelings of shame and distress of her friend, and accompanied her to a lying-in hospital, where she stayed with her for some weeks. This experience evidently made a very deep impression on Miss J., and became a considerable factor in the development of her delusional fancies.

She came home about a year before admission to the asylum, and her friends observed that a change had taken place in her character and mental outlook. "She was self-centered, appeared to have lost will power, was untidy and careless in her dress and habits, and behaved as though she had been away for a week instead of several years." She soon got employment, but was restless and dissatisfied with her pay and prospects, as compared to what she had had in the colony to which she was anxious to return, and was constantly worrying over the getting sufficient money to take her back.

About a month before admission she showed her first obvious indication of mental disturbance by asserting that she had been insulted by an official superior, a statement for which there was not the slightest foundation. A day or two after this she would not go home, thinking she had given offense by making this charge, but wandered about looking for rooms. When found by her sister she was in an hysterical and depressed state, and was with difficulty persuaded to go home.

Her condition from this time became rapidly worse. She complained that people in the train talked about her because she was impure.

One evening when her sister and she went shopping she made some proposals as to expenditure of an extravagant kind and justified them by taking a piece of paper, an old account, from her pocket, and saying to her sister that by presenting this at a certain bookshop she would get six millions. At one of the shops they visited instead of ordering a coat, as she intended, she ordered a full outfit for herself and all her family, as they were, she asserted, all going abroad. She refused absolutely to go to work next morning, saying she had plenty of money and did not require to work, and for a few days was very happy over her

wealthy condition. Not many days after this she maintained that she had been married to Mr. B. For a few nights after this she slept badly, and came out of bed at every sound, imagining that Mr. B. had come. Latterly she began to take cold baths on every possible occasion, in order to purify herself, and with the same idea four days before admission had burned both heels on a hot water bottle. In connection with her supposed possession of great wealth she had scribbled on odd pieces of paper some of the uses to which she had intended to put it; amongst them were "an institution for poor children," "to help the deformed and crippled," "to supply funds for the irrigation of fertile parts of South Africa," "to provide places of amusement, reading rooms, games, etc., for railway men," "to assist the class known as decayed gentlewomen," etc.

I saw her privately a few days before her admission to the asylum, and what was then most in evidence was the sexual character of her delusions of bodily impurity and of marriage. As to this important sexual factor in all such cases, her history was that, as above indicated, of an intelligent, hard-working girl of good character and conduct, who appeared to shun rather than to seek the society of young men. The suggestive influence upon her mental condition of her unfortunate colonial experience was, however, very evident. In particular did her close association with her friend's unhappy experience and subsequent marriage suggest her own marriage and also to her official superior. Behind this lay, as was shown by her delusions of impurity, emotional complexes of a sexual nature; to get at those I used the association test in addition to careful questioning as to her past experiences. The association test was used very fully several times during her stay in the asylum and will be referred to later. To my questions she responded readily and without reservation, and even on her return home that night wrote a letter to me telling of childish incidents and feelings remembered after leaving me and as the result of my questions. They were such as Freud would hold as of material consequence in the genesis of her morbid mental condition, but which did not appear to me to be of much significance in that way. There was no evidence

of pain, anxiety, or shame, at least to any notable extent, connected with them, nor anything like a special psychic trauma discovered, and there was no trace at attempts of suppression or conversion of them. I judged that their emotional tone, though undoubted, was only active and disturbing through associations with her later colonial experiences, which were largely connected with desires and disappointments as to marriage and suggestions based on her friend's fall and its outcome in marriage.

Hypnoidization was used on one occasion after her admission to the asylum, and to some extent the result contradicted my opinion as to the effects from early experiences. When roused from the condition she told us she had thought of Mr. B., of seeing a white light like a candle flame, of going to heaven, of seeing her mother and a girl acquaintance who had taken her to a Christian Science meeting which had impressed her. In this connection she informed me that when at home on two occasions she had thought of going to heaven, and thought that her sister represented a brother who had died many years ago, and that she tried to get hold of him, that she had to do it. This had frightened her; she had fears of going out and stayed in the house for a week. It must be remembered that at this time her delusions were developing. The key to those ideas about heaven, about her brother, and about his death, which was symbolized by the white flame and the going to heaven, was in the emotional upset connected with the death of her brother and the memory of some painful emotional experiences connected with him. We might hold that here we are in the presence of what Freud would term "the nucleus of the pathogenic organization," but as our further investigation, by means of Jung's association test and otherwise, showed, the dominant emotional complexes were the result of her special colonial experiences. Psychoanalysis dealing with the nucleus had no apparent therapeutical value, treatment was only effective when it dealt with her later and colonial experiences.

The association tests, begun at her first visit to me, were carried out on three occasions during the period of her stay in the asylum.

On the first occasion forty-five words were used. Her

average reaction time for all of them, five and three fifths seconds, was unduly long, considering her intelligence and profession. About thirty-seven per cent were over this time; superficiality of the association was noted in thirty-one per cent and twenty per cent of the association words were forgotten on repetition. It would be tedious and serve no useful purpose to go into the details of those tests. I therefore select only a few points and a few of the reactions to the more significant test words used from the various experiments:

Stimulus Word	Reaction	Reaction Time	Reproduction
No. 1. Master.	God.	10 sec.	God.
No. 2. Insolent.	No response.	15 sec.	No response.
No. 3. Baby.	Friend's baby.	7 sec.	Friend's baby.
No. 4. Sail.	American.	10 sec.	Sea.
No. 5. Marriage.	Husband	10 sec.	Husband.
No. 6. Violence	Great wind.	10 sec.	Great wind.
No. 7. Passion.	Husband.	9 sec.	Passion of men.
No. 8. New.	Combinations.	9 sec.	New Jerusalem.
No. 9. Assault.	Policeman.	9 sec.	Policeman.

No. 1.—Here the retardation is very marked and the reaction word shows that she must have put aside the word or phrase which would naturally be suggested to her in favor of the Scriptural association between the words Master and God. Some weeks later, when she was much better, the same word gave in two seconds the reply, "headmaster." It was a headmaster who brought her friend into trouble, a headmaster to whom she believed she was married, and a headmaster whom she believed had insulted her after her return from abroad, hence the delayed reaction time and the substitution of God for headmaster.

No. 2.—Gave no response after fifteen seconds; at the third experiment, when one hundred and thirty-two words were used, she gave to the same word the reply "insolent woman," in two and four fifths seconds. The reference was to a woman in the colony who had treated her harshly, and made a specially painful impression on her.

No. 3.—Referred to the baby whose advent was associated with so much that was painful to its mother — her

friend—and herself through her sympathy and association with her friend.

No. 4.—Shows a considerable retardation, as well as forgetting of the reaction word on repetition, which is explained by the fact that on one of her voyages a painful impression was made on her by one of the junior officers, who had been paying her some attentions, attempting to commit something like an assault upon her, which she resisted.

No. 5.—Requires no comment, beyond this that on subsequent occasions she gave to the same word the reaction words, “the marriage of William Ashe,” with a minimum of reaction time. Nos. 6, 7, 8, and 9 all point to the same dominant emotional complexes. At No. 8 the word “combinations” refers to underclothing.

The association words, forgotten on repetition, were also significant of the same thing, such were “Sail,” “Blood,” “New,” “Money,” “Passion,” “To kiss.”

The final experiment of this kind was made on the fifteenth of January, 1910, six or seven weeks after her admission to the asylum. One hundred and thirty-two words were used; the mean average reaction time was two and three fifths seconds, and in every direction a striking improvement was shown, though there were still evidences enough of the existence of the special feeling tone so often referred to; thus: To the word “passion,” on this occasion she gave “For food”; on repetition, “passion of people.” “Trouble” gave in five and a fifth seconds “A lot of trouble,” and on repetition the name of the colonial town where she had lived for some time, and which had been the scene of her many painful experiences.

A full and careful analysis was made of the association words and phrases,¹ and while many interesting points were brought out, for our purpose here, it is unnecessary to go into the details in question, indeed the whole investigation, while of considerable interest, added little to the knowledge obtained by careful questioning and observation of the patient, though it gave independent confirmation of the accuracy

¹ In which I had the valuable assistance of the assistant medical officer, Dr. R. Donald.

of our positions. It was, then, to her special colonial and later experiences that her mental breakdown was due. Certainly up to the time of her colonial life there were no indications of mental instability. She had begun that life by an attack of enteric fever, and thereafter she had spent several years away from relations and home, under the trying conditions of a troublous time in a new country, and had the painful experience of her friend above referred to. The effects upon her mental condition were shown when she came home by her apathy, indifference to relatives, to her personal appearance, and to social conditions. The autogenetic character of her later delusional developments was very obvious indeed, and was the outcome of a marked conflict between her condition and her desires. Take, for instance, her delusions as to money — she left home partly from restlessness, but largely to better herself financially. She returned a disappointed woman, with less than a year's salary as the result of several years of work. She found work at home disappointing both as to salary and prospects, compared with that in the colony. She became discontented and we are informed was constantly scheming how to get enough money to take her back, but failed completely to effect her purpose, and saw nothing before her but the intolerable prospect of long years of prosaic and indifferently paid work, the outcome in her predisposed state of this craving for money to carry out her desire to return to the colony is such a concentration of attention on it as leads to the exclusion of all correcting ideas, to, in short, a dissociation which gives her not only relief, but for a few days happiness in the idea that she has money, and, of course, where the belief is of this purely imaginative kind, has it in abundance. This delusion from its character and the fact that it stood somewhat outside of the intense emotional forces fundamental in nature, which underlay her other delusions, began to die down soon after her admission to the asylum, and quickly yielded to treatment by reassociating her ideas with the facts as to her earnings, her savings, etc. Her other delusions as to personal impurity and marriage were naturally more difficult to remove, but they gradually and steadily died under the same conditions as to treatment;

and she was dismissed cured three months after admission, and for the past fifteen months she has been in regular employment and is reported as well.

We lack here a marked toxic starting point, as in Miss X.'s case, as we do the sudden appearance of the mental disturbance, though the delusional development was comparatively quick here too. To understand such a development, be it quick or slow, we surely require something more than the mere concentration of attention on one set of ideas, no matter how deep seated or how great may be the feeling tone involved.

We may accept as sufficient in our present state of knowledge a condition as much physiological as psychological, such as Janet appears to us to mean by his "*Abaissement de la tension psychologique et nerveuse*," where the disturbance is not simply emotional, but where there are alterations of nutrition and vitality as well; "*Il y a là un abaissement de la vitalité qui est bien d'accord avec cet abaissement de la tension nerveuse ce que nous supposons.*"¹ Or we may postulate a toxin x, as Jung does for dementia præcox, who considers such a toxin as possibly produced by the psychological affects. "The more detailed and sharper the analysis the more we see that in numerous cases at the outset of the disease there was a strong effect from which the initiatory moodiness developed. In such cases one feels tempted to attribute causal significance to the complex, but one must add the already mentioned restriction, that is, that the complex besides its psychological effects produces also an x (toxin), which helps along the process of destruction."² It is interesting to put in contrast with this statement one from Schopenhauer: "The madness which has sprung from purely psychical causes may perhaps, by the violent perversion of the course of thought which has produced it, also introduce a kind of paralysis or other depravity of some part of the brain, which if not soon done away with becomes permanent."³

¹ *Les Obsessions et la Psychasthénie*, vol. i, p. 499.

² *The Psychology of Dementia Præcox*, by Dr. C. I. Jung. Translated by Drs. Patterson and Brill, p. 97.

³ Schopenhauer, *Mind as Will and Idea*. Translated by Haldane and Kemp, Book III, cap. xxxii.

We are certainly not disposed to accept the teaching of Freud as to causation in this or Miss X.'s case, so far at least as the predominance given to infantile and juvenile sex impulses or determinants are concerned, unless indeed we make it a question of evolution when we must go further back and broaden much more than Freud does the foundations of our sensory and conscious life.

In both cases we are dealing with the effects essentially of the physiological and social strains of adolescent and adult life, in which heredity in the one case and temperament in the other were predisposing causes. If another argument in this direction be required, it is presented by the character, completeness, and so far permanence of the recovery of the patients.

A CASE OF SO-CALLED ALCOHOLIC AMNESIA
FOLLOWING PROLONGED STUPOR,
TERMINATING IN RECOVERY
AFTER RE-EDUCATION*

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THE condition here reported is that of a patient who, as the result of alcoholic excess, developed delusions of persecution and a state of hallucinatory excitement of short duration. This was followed by a state of stupor lasting nearly two years, from which he recovered, but with a total loss of the power of recollection. He also recovered from the memory disturbance after a process of re-education.

The term *amnesia* is commonly used in a broad sense to indicate a loss of memory. It has been made to include failures of memory, both temporary and permanent, whether characterized by a loss of certain kinds of memory, as in the amnesic aphasias; or by a loss of the power to recall memories of every kind, covering a definite period, or the entire life of the individual.

The amnesia manifested by the patient whose case is here described belongs to the transitory retrograde variety, and was general in that there was a loss of recollection of all events of the life of the individual—he remembered nothing up to a definite point. Nevertheless, he possessed a remarkable degree of tenacity of memory for all events which followed his comparatively abrupt psychic awakening. This was shown by his ability to recall and retain all recent events when once they were brought to his attention. The re-education process was for him a laborious one, covering a period of many months, and to those who had the opportunity to observe him, it was a most interesting process.

*Read at the Meeting of the Philadelphia Psychiatric Society, May 12, 1911.

The particular interest centered about the fact that the patient possessed no recollection of his experiences prior to and including the period of clouded consciousness; but he had no amnesia for those experiences which occurred after he passed into the state of comparatively clear state of mind, at which time his re-education began.

Furthermore, the case was of unusual interest to those who observed the condition, on account of the length of time covered by the stuporous state, and the state of ambulatory automatism. During this period the patient was regarded as suffering from a progressive alcoholic dementia, and the prognosis made accordingly. The comparative suddenness with which the change in mental state appeared, after an attack of acute digestive disorder, makes us recall the instances we have seen in which an accident, a carbuncle, or other acute physical disorder, has been followed in some forms of mental disease by a rapid recovery from the psychosis.

In addition to the above reasons, the fact that the patient made a most satisfactory recovery, after a period of tedious re-education effort, makes the case worthy of record.

The following has been extracted from the history of the disorder, and the notes, as they were recorded during the course of the malady, and the re-education period:

The patient, a male, thirty-six years of age, by occupation a clerk, came under observation April 22, 1905.

Family History: Father dead, cause unknown. Mother living at the age of seventy-six. She had a "stroke" several years ago. No distinct neuropathic history obtained. Three children living and well.

Patient's History: The patient has been a heavy drinker for several years; has been subject to attacks of gastric disorder. Luetic infection denied. For a year previous to his admission he is said to have been acting queerly, and to have been more irritable than usual.

The pronounced mental change occurred in February, 1905, after drinking a large quantity of champagne on a wager. The night of the excessive indulgence, while on the way home, he became excitable, thought the police were after him, and that he had seduced a young girl.

When admitted to the hospital he was in a state of ex-

citement, was pugnacious, made an attempt to get away from the attendants. He was partly oriented, as shown by the statement that he "ought not to be in a crazy house." Within a few hours after admission he passed into a state of stupor. The following day he suffered an attack of syncope, during which he became almost pulseless. Upon recovering from this attack he continued in a stuporous state, lying with eyes open and fixed. He could not be roused sufficiently to give him food. Later, it was possible to feed him liquids, though he remained in the state of stupor, and made no effort to help himself.

Remaining in this state he occasionally took food when put to his lips, and swallowed without difficulty. At times he roused sufficiently to speak a few words, for example, rapidly repeating the word "water."

Most of the time he remained motionless, staring as if looking at one fixed spot on the ceiling.

It was not until he had been under observation a month that he was noticed turning on his side when about to sleep. When the arms were passively raised they immediately fell as soon as the support was removed. No attention was paid by him to those about him, he required attention to all his physical needs; *bladder and rectum were incontinent*.

July 11, 1905. For the first time in two months the patient spoke, saying, "What is the matter with me?" "Where in the devil am I?" After that he immediately lapsed into his former stuporous state. A few days later he asked what was his name and where he was, and again promptly lapsed into apparent stupor. On another occasion he asked, "When are you going to take me out of here?" When asked where he wanted to go, he replied, "To hell." During five months the patient spoke three times, made no effort to help himself, and remained in a stuporous condition most of the time.

September 30, 1905: Recently the patient made several attempts to move himself, but was unable to sit up unless supported. When placed in a chair he would immediately fall to one side or the other. He learned to sit erect by being placed in a chair in a corner, where his body would be supported by the adjacent walls.

During the next month he learned to stand alone, and, very gradually, to walk with aid. He was able to sit up several hours daily. At this time it was noticed that he moved the head and eyes when in the recumbent position, the first movements observed, except occasional blinking of the eyelids.

November 18, 1905. Patient walked about without assistance, but only when placed in the standing position, and started in a given direction. He would then walk to the opposite wall, only to stand facing it until he was turned about.

January 20, 1906. In the presence of a nurse and a visitor the patient spoke a few intelligible sentences. The words were not recorded, but in substance he said that he wanted to speak but could not. His general condition continued unchanged for several months. In the mean time he learned to smoke a pipe, which, if filled and a lighted match placed over the bowl, he would puff as long as the pipe was in his mouth. If the pipe was not made ready for him and placed in his mouth he would hold it in his hand for an indefinite time. When visited by relatives he would look at them, at times would smile, but did not speak.

He was still unable to attend to any of his physical needs, except that he slowly learned to feed himself to the extent that when food was placed before him and a spoon in his hand, he would help himself. Occasionally he would begin spontaneously to eat with his fingers.

For about a year his general condition was unchanged, until he had an attack of abdominal pain with vomiting, refusal of food, and offensive diarrhea, which lasted about a week. For several weeks he took food sparingly, and occasionally he vomited, after giving evidence of abdominal pain. He drank freely of water, often going for it himself and drinking directly from the faucet. When taken to the table he would sit with his arms hanging by his side, and the head dropped with the chin resting on the sternum.

January 4, 1907. Yesterday, while the patient was being assisted in dressing, he spoke to the attendant, for the first time in about eleven months. He asked for "some water," and, when urged to go to the dining-room he asked to "be excused."

Although this was not the first time that the patient had spoken since he passed from the condition of excitement to that of stupor, it was the first time that he gave evidence of recognizing his relation to his environment. It was clear that the patient did not know where he was, but his manner of reaction when spoken to, although he did not answer, was distinctly different from that which characterized his reaction to external stimulation the previous day.

The patient did not speak again until evening. During an attempt to get him to speak by questioning him closely for a time he seemed unable to answer, simply looked at his questioner, and appeared confused.

Finally, in reply to questions concerning why he had not been able to talk, the patient replied, "It's funny how it all came."

When asked, "What came?" he remained silent for a few moments and finally replied, "You know."

It was impossible to get him to answer further any questions which might have thrown some light upon his mental state, so it was decided to try to get him to respond to questions concerning his recent pain and apparent discomfort. When asked why he did not eat, he promptly said that he could not "keep it down." When asked how his stomach felt, he promptly replied "hot." Further than this he did not speak during the first day.

January 5, 1907. The patient took no food, drank freely of water; during the morning he vomited.

That day he was asked by a nurse whether he would like to go home to see his wife and family. Previous to this the patient had not mentioned his family, but now promptly replied that he would like to see them.

Later in the day, when the patient was visited by the writer, he asked if he might see his wife. The same evening when visited by his wife he at first was not able to speak, or at least he did not, but finally, when asked if he wanted to go home, he answered, "I want to go home, if for only ten minutes, to see what it is like." This was the longest sentence the patient had formed, and this he repeated several times. When assured that he would be allowed to go home he seemed at ease, but did not further express himself.

January 6, 1907. The patient took a small amount of albumen water; he tried to retain coffee, but could not; he continued to complain of the "hot feeling" in his stomach.

When questioned further about his speech and memory he said that "three days ago was the first time I realized anything." When asked his name, he replied, "I can't tell; that's what I want to find out." Likewise he was unable to tell where he was or where he lived. To all such questions, he said, "I can't tell; that's what I want to find out." He stated that he thought that if he were to go home "to see what it is like," he could "get together." (Home was suggested to him on the previous day.) Later, when told that some one had come to take him home he gave evidence of pleasure and expressed his thanks for the opportunity.

January 7, 1907. The patient was reported as being very anxious to remain at home. (He was allowed to go to his home with the understanding that he was to return to the hospital the next day.) He returned, for examination on the second day, with the following result:

Q. "Where have you been?"

A. "Home, at No. — B — Street."

"Do you remember going home?"

"Yes."

"Do you recall anything before that?"

"Yes, the day before I went home."

"Do you recall anything being wrong with your stomach?"

"Yes, I could not keep anything on my stomach."

"Do you remember my talk with you the morning you went home?"

"Yes, you asked me my name, where I lived, and about my brother-in-law, Mr. X."

"When you reached home did things seem as if you had seen them before?"

"No, not until the next day."

"How did they seem then?"

"As if I had never been away. Hearing the family talk brought it back to me."

The patient was able to give his name and address, and

to answer several questions, the subjects of which he had heard discussed during the two days he spent at home.

The condition of his memory is well defined by his following answers:

"Where were you born?"

"I cannot say. Somewhere in this state, I believe."

"How old are you?"

"I cannot say."

"Are you married?"

"Yes." (This he had been told.)

"When were you married?"

"I cannot say."

"Have you any children?"

"Yes."

"How many?"

"Three."

"How old are they?"

"I cannot say."

"Did you know your children when you first saw them after you went home?"

"Not at first."

"What day is to-day?"

"Tuesday."

"What time were you here yesterday?"

"About four o'clock."

At this point Dr. C. entered the room. The patient was asked if he knew Dr. C., but he did not recognize him as ever having seen him before. He supposed that might be the other doctor, as he had heard them at home speaking of another doctor.

"What river runs through P.?"

"The Delaware."

"Is there any other river?"

"I don't know of any."

Patient names table when asked to do so. When shown a horn paper-cutter he cannot at first name it. He says that he has one at home. Says that it is made of bone, that it looks familiar. After a time he called it a "paper knife."

When given a child's picture book on animals he is able

to read a few lines. When asked what he read a few minutes later he can give the essential idea. He cannot continue reading for more than a few minutes, giving the reason that something else comes into his head.

In regard to the earlier condition of the patient's memory for reading, the first trial at reading was made on the *third* day (January 7), after his partial psychic awakening. At that time he was able to reproduce with some effort impressions of written language, but what he read meant nothing to him until its meaning was explained. He also remembered what he read, but did not understand it unless explained at the time of first reading.

January 9, 1907. Yesterday he saw the barber who had shaved him for years. The first time he saw him the patient did not know him. The second time he recognized having seen the man a few days before, and was able to recall the man's first name and part of the last name. P. seems to remember all that is told him.

The patient was asked to write. Paper and writing tablet were placed on a table before him, but he does not make any offer to begin to write.

When asked whether he can write, he states that he had not thought about that; he had seen his son write his name the night before, but the patient had not noticed how it was done at the time.

After questioning the patient as to how it was done he is unable to tell, also is unable to begin.

"What is Dr. B. doing now?"

"He is writing."

"How does he do it?"

"With a pencil and paper."

"There are the pencil and paper; now you write."

"I don't know how to begin."

Paper and pencil are handed to him; he still sits apparently thinking how he shall begin. When the name of the town in which he lives is shown him in writing he can read it, but is unable to write it from dictation or copy.

To-day the patient recognized Dr. C. as having met him yesterday.

That the patient possessed general ideas in some sub-

jects and lacked detail was shown when he was asked what was the distance from his home to the place in which he was employed. He said, "About as far as from here to that house (pointing to the greenhouse).

He then promptly asks, "How would you measure distance?"

A foot rule was shown him in order that it might suggest the unit of measure. Such was not the case, however, for he only answered, "My boy has one like that; it is used for school purposes."

The first time the patient went to the office where he was employed he was not told that he had been there before. Nevertheless, he at once recognized the place as having seen it before, but it did not occur to him that it was the office in which he had been a part of the working force. He also says that his home seems familiar, but he is unable to recall any of his former experiences, or any occurrences which had taken place there before his attack. He was shown the typewriter and telephone, both of which he had used many times. He was not able to name either of them, could not tell their use, and had no recollection of ever having used them. He was shown the account books containing entries in his own handwriting. These, he said, seemed familiar to him, but he could not tell why.

January 10, 1908. To-day the patient succeeded in writing the name of his town. He had been practising it in the mean time. He reads simple sentences well and is able to recall what he had read.

Questioned as follows:

"In what year were you born?"

"I cannot say."

"What year is this?"

"1907, they tell me."

"Do you remember anything about any other year?"

"No, I do not."

"How old are you?"

"Thirty-six."

"Are you older or younger than your children?"

"Older."

"How is that?"

"I don't know, except that I am thirty-six and they are nine, eleven, and fifteen.

"What is the age of your youngest child?"

"Nine."

"Do you remember the time when your youngest child was born?"

"No."

"You say you have three children?"

"Yes."

"Have you always had three children?"

"I don't know, I suppose I must have had."

"You say you have a wife?"

"Yes."

"Have you always had a wife?"

"I can't say. I suppose I must have had one all the time."

"What relation are you to your children?"

"Father."

"What relation is your wife to your children?"

"Their mother, they say."

"Have you a father?"

"I don't know."

At this time the patient appeared as if in deep thought. When asked what he was thinking about, he replied, "I am thinking whether I have a father."

In order to attract his attention from the last question, he was asked, "Do you remember anything you saw at the office yesterday?"

"Yes, a couple of desks. A high one. They are not all one." (Meaning that the office was divided into smaller rooms by partitions.)

January 14, 1908. He was shown a memorandum book containing entries in his own writing. This he did not recognize, but supposed that was what he "used to do." He now says that he has seen people use the telephone so that now he knows its use. Previous to that he was unable to name the instrument, and could not tell its use.

When the patient was questioned about a near relative, he replied that he had not thought of that person; as the patient expressed it, "that has not yet come into my mind." When

asked whether he had any idea of that person's appearance, he was not able to say whether he would recognize him or not.

Patient was asked what the middle initial letter in his name indicated. This he was unable to tell, as no one had yet given him that information.

That he was unable to understand the significance of family names was clearly indicated by the following:

After writing his own name, which he had been taught the day before, he was asked, "Is your name S —?" "Yes." "Is your wife's name S —?" "Yes." "Is your son's name S —?" Yes. I guess everybody's name is S —."

January 15, 1908. To-day he is able to write the name of his town when a copy is placed before him, but is unable to write without the copy. He says that he cannot remember the letters.

He saw snow for the first time, as far as he remembered. He had been told of the fact that it was snowing when he was at home that morning. He did not understand what was meant until he was told to look out of doors, when he saw "it coming down." He could not give any idea of the nature of snow. He says that it is not rain because rain is wet. When some snow was brought indoors, and he watched it melt, he reasoned that the change was due to the fact that it was "warmer in the house," but could give no clear idea about the phenomenon of melting. That he remembered nothing of his boyhood was illustrated by the fact that when he was asked about one of his fingers which was deformed by an injury in early life, he was unable to tell anything in regard to the accident, but said that he would find out about that. When questioned about a city in which he had spent several years of his life he was unable to state whether he had ever been there or not. He had no idea of geographical location. When questioned about the points of the compass he showed that he lacked all knowledge concerning them. When told of "North," "South," etc., he said he had "not gone into that yet." When asked if he ever had gone to school he replied that he did not know, stating that he had not thought about that.

March 7, 1908. Patient has gained a great deal of

knowledge through reading; states that he finds a great deal of what he wants to know in the encyclopedia. He spends much of his time in that way. He has no trouble in remembering what he reads. He can write from dictation, but finds that there are many words which he cannot spell. He has learned sufficient in the past two months to enable him to carry on an intelligent conversation on the daily topics with which he has made himself familiar. If he is questioned upon any subject of which he is ignorant, he at once says that he has not yet heard of that. For example, when asked if he knows anything about the World's Fair of 1900, he replied, "No, but I have heard of the one in 1889 when the Eiffel tower was built."

Without further lengthening the case history, the above will be sufficient to furnish some conception of the mental status of the patient.

Referring to the process itself, Wundt¹ states that memory arises by a union of ideational elements in such a way as to form a special idea which can be referred to an earlier impression. Again, memory is regarded as dependent upon impressibility and on retentiveness, and upon these depends the power of reproduction or recollection. We may express it as a complex process depending upon two processes, first the process of reception of impressions, and, second, the power to recall those impressions.

Our patient had received numberless impressions during his life, but at the moment of his awakening he was powerless to recall one of them. There was a time when he was incapable of receiving impressions, that is to say, when he was in a state of stupor and remained motionless, regardless of all external stimulation. There was also a period of several months' duration, when, although he was capable of receiving impressions, that is, when sensory stimuli were followed by motor reactions, he had not the ability to indicate that he was conscious of those impressions. During that second period all his acts appeared "automatic." He sat down when pushed into a chair; he got up only when helped to his feet; he walked when started, and continued walking until he came to an obstruction and could walk no farther.

¹ Wundt, *Outlines of Psychology*, 2d edition.

The lapsed memories for the movements of his body, the kinesthetic memories, including those movements commonly called "automatic actions," commenced to return at the time he first sat up unassisted; his ideational memories, characterized by the psychic act of recollection were entirely wanting. He possessed no knowledge of himself whatever at the time of his awakening. All data acquired were solely dependent upon his experiences which followed his awakening, that is to say, impressions which were then, to him, equivalent to a repetition of his former forgotten experiences.

He required to be told that he had three children before he could apprehend the fact. At no time was he able to recall the idea he at one time had, namely, that he was the father of his children, nor did he recall the fact, even when he saw his children and was told of the fact. On account of his helpless state, in so far as recollection was concerned, he was compelled to accept as fact the evidence of others.

The only suggestion of apparent recollection of former impressions he gave was when for the first time he was shown how to write his name, and later, when he seemed to have forgotten how to form certain letters of the alphabet. He very rapidly learned to write his name and some other words without being conscious of having formerly known how to form the characters. If we consider that he also learned to use a knife and a fork instead of his fingers, without knowing that those articles as such existed, and without knowing how to name them until many months after he was given their names, we can easily see why he should learn to write with comparative ease. The writing of one's name is an automatic act which is done without the thought of how it is accomplished. In all other instances there was no such reduction in the length of time it required for him to acquire a knowledge of his former experiences. Furthermore, the possession of those data did not enable him to recall, by association, other facts dependent upon those experiences. For example, when told for the first time that "it is snowing," he looked about the room instead of looking out of doors. He was forced to accept the fact as such, and to him it was an entirely new fact. He did not know it was snowing because the season was winter until he was given

that information; he did not know that the snow was cold until he felt it and the fact was explained; he did not know that it was a form of moisture until he saw it melt, when he said that it had "turned into water," which he had seen the day before when it rained.

Following the history of the course of the disorder, one can see that the amnesia persisted for all data which had not been recalled for him by those familiar with his early experiences. Although those data, when brought to his attention, were not recognized, he had no difficulty in conserving and subsequently recalling his impressions. His memory for facts learned in this way was remarkably tenacious. During the first few days of the re-education period he experienced some difficulty in recalling a few facts. This appeared to be the result of defective power of attention; something else would come into his head, as he expressed it. Also, on account of the fact that he was receiving so many new experiences at that time he had difficulty in keeping track of them all. In spite of this apparent difficulty he learned with remarkable rapidity, and it was not long before both these obstacles disappeared. At no time was there any evidence of dementia. He could reason well; his deductions were logical and were carried out as far as his store of ideas would permit. Later he became keenly interested; he was anxious to acquire new data, and at each examination would relate with pleasure that which he had learned in the intervals. An interesting fact was observed in regard to his method of acquiring a vocabulary. Most individuals, it is said, recall visual perceptions with greater ease than auditory perceptions.¹ Our patient proved to be an interesting exception to this, as was shown in his attempt to learn new words. Words written for him were not remembered as easily as when they were spelled for him audibly.

Finally the case presented an interesting and important medico-legal aspect. During the early part of the convalescent period, which extended over the space of several weeks, the patient had as yet learned of none of the conventionalities of life. All of his efforts were directed towards learning

¹ A. Kirkpatrick, *Psych. Rev.*, 1894, cited by Bianchi, *Text-book of Psychiatry*, New York, 1906.

concrete facts. Direct questioning clearly showed that the patient was unable to distinguish between right and wrong, in fact, he did not know the meaning of the words. The forensic importance of this feature of the case is self-evident and therefore does not call for any further discussion.

A CASE OF HALLUCINOSIS INDUCED BY REPRESSION*

BY C. P. OBERNDORF, M.D., NEW YORK CITY

IT is assumed that the members of the society are fairly clear as to the contentions of the psychoanalytic school, and are interested, not especially in propagating its tenets, but in critically studying and elucidating them. For, as Dr. Prince recently pointed out, the fact that many investigators pursuing the same method arrive at similar results does not demonstrate that either method or the result is scientifically correct, or in the case of psychoanalysis, therapeutically desirable. Psychoanalytic methods are beyond question valuable in disclosing certain mechanisms which antedate mental disorders, but these mechanisms are apparently identical in a great variety of functional disorders, some of which in former times have been cured by other methods, mostly suggestive, either in the waking or hypnoidal state, and others of which have become progressively worse. The facile explanation — or shall we say evasion — of this is offered in the view that although the processes are the same, they are operating in different mental soil — an attitude which, so far as therapeusis goes, has a decidedly Calvinistic ring. If the soil is, after all, the pivotal factor, it would seem that the hopes at first advanced through the introduction of analytic methods will be minimized.

It seems obvious, therefore, that if we find the underlying processes in dementia præcox, for example, or in manic attacks, identical with those of psychoneuroses, and in these conditions the most adept analysis is apparently ineffective in influencing the course or duration of the disorder, while on the other hand psychoneuroses are in many instances self-limited, it is difficult to gauge the exact therapeutic extent of our labor. This much is true, that cathartic and analytic methods which disclose the patient's conscious life and unconscious longings from earliest child-

*Read before the New York Psychoanalytic Society.

hood yield an intimate comprehension of the individual's mental problems, his resources in dealing with them, his character and personality, so that an intelligent basis at least is obtained for attempts at cure.

Even after a brief experience with cases showing abnormal psychological reactions, one is led to the conclusion that certain disinclinations, gestures, expressions, and trends are the result of definite underlying factors, the unraveling of which affords a fascinating study. Such, it seems to me, existed in the case which is about to be presented, where I feel that the nature of the hallucinations was not a matter of chance, but dependent upon yearnings and repressions which had occupied the patient's mind for years, and the hallucinations may reasonably be considered the fulfillment of her subconscious desires.

The patient, H. H., consulted me at the Cornell University clinic, having failed to secure relief from her physician, who had been administering for some time to her symptoms as they arose, but which of late had become so aggravated as to demand constant attention. Her "nervousness" consisted of frequent attacks of fainting spells, during which she did not lose consciousness, of sleeplessness, attacks of dyspnea, and of tachycardia, and periods when the entire body felt numb. The menstrual period appeared to intensify all the symptoms.

These manifestations, which had existed for months, fluctuating between severe disturbances and a general continual mental malaise, suddenly became very much worse about February, 1909, when a new, alarming symptom was added to the category. One afternoon, while the patient was perfectly awake, she saw "a skeleton's head, with grinning teeth, which appeared on the wall. It remained for an hour, appearing and disappearing, becoming alternately distinct and faint." The vision reappeared about April, 1909, when "the pictures on the wall began to assume the shape of fiendish-looking things — and sometimes I saw snakes."

These visions recurred more or less persistently and frequently, but on July 17th the patient, while awake, saw "an animal with white on its head, pointed nose, and

very hairy body,—long, coarse hair. It seemed to crawl up beside me. Once it came up beside me and seemed about to grab at me.” This convinced her she had become or would soon be insane.

Other visions which later appeared frequently, “the faces of old men, with beards and skeleton heads grinning from the walls,” satisfied her that she had become insane, as her father had been before her.

The patient, a German woman of thirty-eight, had been residing in America since infancy. The father, who had at several intervals been an inmate of one of the Pennsylvania county asylums, finally died in the hospital in a state of mild deterioration, though he had been considered a case of manic depressive insanity. The mother, who is still living at an old age, is a mild, shrinking personality, who appeared restless and self-concerned at the time when she was observed. A younger sister, who experienced a temporary depression at the age of eighteen, is at present successfully completing a college course. Otherwise the family history is negative.

While the patient describes herself as having been fairly happy as a child, she considers herself to have been impressionable and over-conscientious. It seems that from her earliest recollections she was deeply attached to her father, with whom her relations were peculiarly intimate, and who not only considered her his favorite, but spared her in many ways. Long before it became necessary to commit him, at many times he became subject to outbursts of violence when he would attack and occasionally brutally beat his wife and all the other children, with the exception of the patient. Moreover, he would frequently allow her to accompany him on the long trips through the countryside, which his work as a book agent entailed. On the other hand, it is quite evident that the father possessed many attractive qualities, namely, a powerful, imposing physique; a large, rather kindly face; deep interest in the finer things in life, and a decided intellectual superiority over the mother, which imprinted themselves strongly upon the patient’s mind. She was therefore deeply affected when he first became mentally deranged,

when she was about sixteen years old. At that time she experienced a transient illness which she describes as a shock, during which she suffered from a loss of sensation on the entire left side, but after being convinced by her physician that the trouble was purely a nervous one she speedily recovered.

Although she had been attending school up to this time, financial necessity compelled her to seek work in a small store as a clerk so that she might contribute to the support of the family. When her brother died, a few months later, the burdens of the family descended upon her, as the eldest child, rather than upon the inefficient mother. To be released from her material difficulties, and so that she might have a home where she could assist her younger sisters, at the age of twenty she married, at her mother's instigation, a farmer of moderate means, with whom she had never been profoundly in love but who offered her support.

From its incipency her married life did not prove entirely satisfactory. Sexual intercourse proved to be not only distasteful to her, but to a certain extent a shock, for she asserts that previous to her marriage she was absolutely ignorant of the demands of conjugal relations. She insists on having experienced sexual sensations for the first time when she first applied menstrual pads at the age of thirteen, but she claims to have given sexual matters little thought. She believed up to the time of her marriage that reproduction was produced through some action of the male with his hand, basing the idea on a warning given her by her mother at the time when an acquaintance became illegitimately pregnant, that such a thing could never occur to her provided that she never allowed a man to fondle underneath her skirts. That such a condition should exist, and frequently does exist, among carefully nurtured girls in homes of refinement where reference to sexual matters is synonymous with indecency, seems entirely possible.

Notwithstanding her repugnance to intercourse which threatened to precipitate marital infelicity, she yielded because her husband insisted. But in addition to this,

her husband's personality, described by her as blunt, uncouth, coarse, and unsympathetic, irritated and antagonized her. Although she had done nothing to prevent conception, it was not until five years after marriage that she became pregnant — much to her chagrin. Not only was her pregnancy a period of depression and anxiety and parturition extraordinarily severe, but to add to her suffering, the child, which she says had become dear to her "as soon as she heard its tiny cry" notwithstanding her previous hope that it might not live, died after one week. She thereupon exacted the promise from her husband that he would never impregnate her again, which he agreed to do by practicing coitus interruptus. When some two years after the death of her first child she was pronounced pregnant again by her family physician, she complained bitterly to her husband, who placated her by the explanation that it must have been entirely accidental. In spite of her strong inclination to induce abortion she carried to term, and this child, a son, is now living, — an elf-like, puny creature, stubborn, mendacious, irritable, and subject to convulsions, which are apparently hysterical.

When her husband confessed to her a short time after this second birth that he had voluntarily impregnated her, her resentment at his deception and conduct was so great that her dislike for him increased, and any confidence which she formerly possessed for him became totally destroyed. However, being financially dependent upon him and lacking the courage for the alternative of abandoning him, she remained with him, perfunctorily performing her wifely duties, but continuing to lead an empty, cheerless life in a very small Pennsylvania village.

Perhaps five years ago, the husband, who had always been a moderate drinker, began to indulge in periodical silent sprees. The wife really preferred this secrecy to public drinking, as they lived in a temperance community where any alcoholic indulgence was considered disgraceful, and she was very solicitous of the good will of the village. In this environment of hopelessness and emotional barrenness her home life steadily became more intolerably vexatious.

The patient impressed me during the first few interviews as a woman of rather superficial mental qualifications, who is entirely dependent on established opinions, priding herself on her associations with women in the same town who are financially and socially above her. She was fretful, restless, anxious, and disturbed, though physically a robust rather florid brunette, with rather pronounced, almost masculine features.

After the foregoing history was obtained the patient's sexual life was more closely investigated, as the visions were considered strongly suggestive of repressed sexual desire. The patient then emphasized that of late, for the first time in her married life, she had been willingly indulging with her husband—a circumstance which impressed me as being decidedly unusual after so long a period of physical repugnance. Finally she also confessed that for some three years past she had been clandestinely indulging sexually with a single man, who had been her husband's most intimate friend for years. This individual, who had been coming to visit the family very frequently, possessed for her all those attributes which she admired most in men, but which she missed in her husband—namely, quietude, sympathy, courtesy, and culture. She says that while no one else seemed capable of discovering so many laudable qualities in her lover, this apparent neglect on the part of others in itself tended to endear him to her.

During this period she was in a constant mental turmoil, due to the conflict between her ethical sense and consciousness of sexual misconduct, which was highly accentuated by the fear of exposure in case of discovery. For this reason she went to meet her lover in hotels in Philadelphia, always deceiving her husband with the explanation that she had gone to spend the day with her mother in Trenton. As a matter of fact, so that she might not add falsehood to the multitude of sins which she imagined that she was committing, she would actually first journey to Trenton to visit her mother, though this route was considerably further. Thus she passed nearly three years in an existence of mingled satisfaction in requiting her desires for attention and love,

and of repentance and agony for violating the bonds which she considered most holy.

About January, 1909, the patient interrupted her relations with her lover because she could no longer suppress the idea that her actions were morally infamous. It was about this time that the visions first appeared, especially those of the skeleton heads. The physician assumed skeleton heads to be symbolic of a wish-fulfillment of death, and when closely questioned the patient confessed that she had often longed that her husband and child might die, especially the child, as then she would feel free to desert her husband and legitimately resume relations with her lover. When asked if she had ever thought of killing either husband or child she stated that the idea had frequently forced itself upon her, so strongly, in fact, that one evening she imagined herself turned into a lion and had her hand about her child's throat, ready to choke it, when she became so alarmed at her temerity that she called a physician.

The hallucination of the snake with the hairy body crawling up beside her was from the outset interpreted to indicate repressed sexual desire, an assumption which facilitated ascertaining the origin of the patient's symptoms. At first when questioned if her husband was a hairy individual she evaded by asserting that she had no basis for comparison, but after her resistances had been successfully overcome she agreed that both her husband and her lover had great quantities of hair on the chest and abdomen.

Her increased desire for sexual intercourse with her husband in recent years is accountable by the circumstance that whenever she yielded to her lover she always suppressed her own orgasm, as she believed that conception occurred only during orgasm, and would thus escape giving birth to an illegitimate child. Coitus with her lover, therefore, afforded her no gratification, but in reality became a hardship, so that on returning home she would indulge herself in an orgasm with her husband while mentally representing the scene as occurring with her lover.

Although it would hardly seem logical to attribute all the patient's symptoms to her repressed sexual longings the greater part of them were undoubtedly dependent upon it. However,

one would expect that any person harassed by the knowledge of sinning, of fear of discovery, and by conflicting emotions, must of necessity become restless, sleepless, and anxious. It is the vision which was unquestionably symbolic, and not "poppy-cock," as the patient had been informed, that is significant. The hallucinations and impulses which had so distracted her were therefore explained as being consequential to the subconscious conflict between her desires and restraints, and she was assured that they did not of necessity constitute prodromata of insanity.

The problem confronting the patient was an extremely involved and delicate one. Plainly, one could not urge her to forsake her husband and child in order that she might requite her love, though at the outset she insisted that she could not exist without her lover. It was considered that even had she yielded to her desires for desertion she would never have attained mental peace because of constantly recurring remorse of her own wrongdoing. It seemed a duty, if possible, to restore her interests to her home and family, which was attempted through long conferences in which the entire situation was minutely discussed and later through suggestions in the hypnoidal state. Thus I was able to gradually produce a marked aversion for her lover, though the tedious struggle was hampered by the impossibility of discontinuing his visits without arousing the suspicions of the husband. Moreover, the patient herself was loathe to renounce the one thing in life which had been her main interest for years. As a matter of fact she did improve markedly, so that after perhaps four months, all her somatic sensations disappeared, with the exception of transient insomnia.

As illustrative of the attitude of the husband I will relate a little incident which occurred about six months after the first visit. Another couple had been traced from a distant city to the town in which the patient lived by a sheriff who was seeking evidence in a divorce suit. Inasmuch as the sheriff was known to the man in the case he felt that the details should be intrusted to some stranger, and therefore asked the patient's husband to assist him. The latter was completely successful in securing his evi-

dence, and returning home in glee of his success, regaled his wife with a detailed description of the event, not omitting his own comments on the justice of the arrest and emphasizing the disgrace of the woman. At this she naturally became greatly exercised, and ventured almost involuntarily the remark, "What would you do if any one in your family should do anything like that?" It evoked the immediate angry yet decisive reply, "I'd break their d—— neck."

Some two weeks after her initial visit to me, the patient related the following dream, which seems clearly to represent in symbolic condensation of her former life and subconscious longings:

"I dreamed I was standing in a back yard and a snake crawled down the bank toward me. It didn't seem ferocious until it got near the house. The snake was very green and had a sort of a square head, tapering toward the front. There was a cot standing at one side near the door, and the snake crawled underneath it. The snake raised the cot up and then my mother appeared on it. He then poked up at my mother with his head and she ran into the house terrified. Then the snake came out from under the cot, and my husband appeared on the scene with a rocking chair. The snake ran around and bit him while he was trying to hit it with the chair. I started to rush out of the door to help my husband, but only got as far as the door, when I woke up."

In connection with the history of the case, the dream would seem easily explicable, although it has not been entirely analyzed. The snake, the patient agreed, resembled in face her lover, and probably also his gradual penetration into her life. Historically she recalled that her house in the small Pennsylvania village had its back door facing a hillside, and it was on a cot in her own home that she first yielded to her husband's friend. The snake is undoubtedly symbolic of sexual intercourse — according to Freud, it always indicates the male genital organ. As a matter of fact the patient wrote me subsequently that one evening when engaged in intercourse with her husband she imagined that the penis had assumed the form of a snake

with a big flat head, so that she could no longer endure connection. The poking up of the snake is a rather pretty example of inversion of the act, and the mother on the bed may be due either to the fact that she had been expecting her mother to visit her on the following day, or perhaps was identifying herself with her mother. Frequently she had reproached herself with thoughts of her mother's mortification should the latter discover the patient's transgressions. As the biting of the snake seemed to typify the injury done to the husband by the lover, it was considered an encouraging sign that in the dream the patient hurried to the aid of the former, though at that time she was intent upon leaving him.

It would be difficult to conceive of a greater number of disagreeable occurrences than have befallen this woman during the past year, which included many illnesses in her family and a surgical illness to herself, in addition to financial worries which overburdened her with household cares. Moreover, her initial aversion to sexual intercourse with her husband not only tended to increase his inconsideration toward her, but on the other hand caused him to spend even more time with his best friend, the patient's lover, who not only continues on terms of utmost intimacy with him, but actually resides in his house.

Under such circumstances a complete recovery could hardly be expected, but I feel that without an investigation into the causes inducing the hallucinations the patient would undoubtedly have drifted into an insane asylum, where under the diagnosis of depressive hallucinosis or an atypical dementia præcox chances at readjustment would have been comparatively slight. At present this much has been accomplished, notwithstanding that she has a latent dread that some day her secret may through some chance be revealed. Firstly, self-respect has been re-established through the restoration of her affection to her husband and the resumption of normal family relations, so that she has resumed her social position in the community. Secondly, complete aversion for her lover has been engendered, notwithstanding his continued proximity. Thirdly, the nervous symptoms originally present have quite disappeared,

so that drugs are unnecessary. While her hallucinations recurred transiently, as she expresses it, her troubles have been replaced by "a cold, clear sadness."

POSSIBILITIES OF A MODIFIED PSYCHO-ANALYSIS*

BY E. W. TAYLOR, M.D., BOSTON

IT is not likely to be seriously questioned that the most significant and far-reaching contribution to our understanding of the psychoneuroses has come through mental analysis. The rationality of a method which seeks to discover rather than to obscure causes is evident, but no sooner has the principle of the method inaugurated by Freud and carried on with notable success by his followers been acknowledged as useful than it is hedged about by limitations which tend to the assumption that it is serviceable in a very limited number of cases. If it be true that the psychoneuroses invariably have their roots in childhood, that a considerable degree of intelligence and relative youth is a prerequisite to treatment by this means, that the method of free association must be adopted in the elucidation of the genesis of symptoms, and that, for these reasons, it is time-taking to a prohibitive degree, it is clear that the method has an applicability much more limited than its great value warrants. It may be admitted forthwith that what is called a complete psychoanalysis is an impossibility, for the reason that the mind even of a child may by no means be wholly revealed. If this be true, degrees of analysis must be admitted, and it is for these more superficial methods — partial or modified analyses — that I wish to put in a modest plea.

It is altogether unfortunate, and, I believe, not consistent with experience, as Jones, for example, has said, that "the amount of time demanded by the treatment as well as other considerations prevent it from being of very wide applicability in general practice." This is certainly proved if the method is to be limited to "completeness," in the sense in which Jones and others use the term. The utility of the idea of analysis seems to me so great that it ought, and I believe

* Read by title at the meeting of the American Psychopathological Society, Washington, May 10, 1911.

may, be applied to advantage as a general method of treatment by the relatively inexperienced in a large number of cases, even in persons after middle life. This statement naturally assumes that neurotic symptoms, phobias, and the like, do not invariably go back in origin to childhood, and that even if tendencies productive of later disturbance are formed at that early period of life it is by no means essential, at least in many cases, to extend one's analysis to that remote period in order to secure striking and, I believe, lasting results.

The inevitable criticism of such a statement may at once be forestalled. It will be said that cures effected in this way are apparent, not real; that recurrence is likely if not inevitable, and that one has no justification for using the term psychoanalysis for any such superficial procedure. It is not worth while to quarrel with terms, but the fact remains that mental analysis, as already suggested, must in any event be faulty and incomplete; that at best, therefore, we may speak only of degrees of completeness and that many conditions unquestionably may be relieved by a superficial examination into the patient's emotional and intellectual life. For example, Jones, in an exhaustive review of psychopathological work in England and America, speaks of a paper by Putnam and one by Linenthal and me, which he says, in general, show sympathy with the psychoanalytic method, but in which the psychoanalysis is of a very elementary character.¹ So far as Linenthal's and my small paper goes, this is undoubtedly true, but the essential point is, did the treatment suffice to accomplish results, and if so, why is not its elementary character a merit rather than an implied defect? One of the cases referred to was a young woman who repeatedly lived over again with extreme distress and anxiety the scene of a fire which had entirely passed out of her consciousness. A revival through a very brief analysis of the experience of the fire with an explanation of the causal relationship between it and her seizures, which were of the anxiety type as well as compulsive in character,

¹ Jones, Bericht über die neuere englische und amerikanische Literatur zur klinischen Psychologie und Psychopathologie. Jahrbuch für psychoanalyt. u. psychopatholog. Forsch. Bd. II.

sufficed to remove the attacks. The only question now at issue is: Was that brief and admittedly superficial analysis sufficient as a therapeutic measure in that case? My personal feeling is that it was, but I realize fully that opinions may differ. To make my contention more concrete I report in some detail the following case which, in my experience, stands as a type of many others:

F., a man of twenty-seven, married, was employed as a fireman in the Boston Fire Department. His main complaint, which he admitted with some diffidence, was that he was unable to stand the rays of the sun, wholly irrespective of the general temperature. He had been to various physicians, who had considered him "nervously run down," and had prescribed according to their lights, but to no effect.

The history, procured with some difficulty, was as follows: He had been married upwards of three years; his wife had had one child born at the eighth month; the labor was difficult and the child lived three months. Ten or twelve years ago he had had an attack of what he called malarial fever. Two years before being seen, in July, during an exceedingly hot period, he had had a similar attack. He was then out of work for twenty-nine days, and when he returned, although otherwise well, he had a distressing feeling that he couldn't stand the heat of the sun. He felt, as he expressed it, "as if the sun went through him, and as if he were going to fall to pieces." As winter came on, he also began to be troubled to a certain degree by artificial heat. This situation seemed so unusual that a further attempt was made to determine more in detail the conditions at or about the time of the beginning of his neurosis. It appeared that he was first taken sick when on an excursion. The most notable symptom was a sense of pressure in the epigastrium. This lasted all day. In the evening he smoked a cigar and felt better. He went to a large fire in the course of his duty, but was unusually troubled by the smoke and was relieved from duty. He was told by his friends that he looked badly. A few days later he had a similar attack to the one described above. It was on a very hot day; he went home and sent for a physician who at first diagnosed indigestion, and later, after examination of the blood, malaria. He had still another attack, but gradually improved, and was working at the end of a month, but felt exceedingly weak. The following summer he continued to improve somewhat, but was far from well. He was able to stand for a time in the sun, but during the summer avoided doing so as much as

possible, because of the unpleasant sensations of weakness and distress which it occasioned. He was still able to do his work, and, in fact, enjoyed the excitement of a fire. It has been a source of great disturbance to him that he could not explain why it was possible to go through various experiences of extreme heat and fire and yet be absolutely incapable of standing the rays of the sun. On one occasion, for example, in winter, when it was four degrees below zero, he had the same distressing sensation. Added to this, there developed a distinct fear of closed places and of crowds. He was not alcoholic, his appetite and sleep were not impaired. He had, however, worried extremely, and felt as if "he might as well be dead," that life was a burden. In trying to combat these feelings, his courage failed, and he was unable to accomplish results. He was cheerful in manner and showed no signs of depression beyond the general anxiety which his increasing incapacity occasioned him. Actual nervous strains did not, however, affect him. On one occasion he narrowly escaped with his life in an explosion, but was not at all disturbed thereby. On another occasion, when many horses were burned, he was obliged to stand on the carcasses of the horses in attempting to put out the fire, and this also he did without flinching. During this period, however, he felt himself unable to go to the theater, although he had the tickets, because of the closeness of the air. He also found it impossible to sit in a certain chair which had been used during his illness with malaria, and felt impelled to go to another room and open the windows wide whatever the outside temperature might be. He was accustomed to work in a small, hot room, under conditions of great discomfort, without the slightest difficulty but, as he expressed it, he was "all gone" when he went out into the sun. A consumptive girl of his acquaintance sat much in the sun. This made him increasingly eager to avoid the sun himself, and he wondered how long he could live if she, in the sun, would live only a few months. He wondered if he would be in this condition of terror till he died. He feared greatly another attack of malaria.

Still entirely dissatisfied with the analysis, further questions were asked regarding the attack of malaria two years before. The memory was not easy to arouse, but finally after much questioning (the method of free association was not used), the simple fact came out that during the time of his high fever and discomfort from malaria, the weather was exceptionally hot, the temperature being well over ninety for a number of days. The combination of his fever and the excessive heat, together with the fact that a misguided woman was continually quoting the readings of a thermometer, constituted a situation associated with great physi-

cal and mental suffering. It was at once clear that when the fever subsided and the temperature decreased, the sense of debility and actual fear of the sun continued invariably to be aroused when he became conscious of the sun's rays. It was only necessary for this one element in the association to be excited to reproduce the entire distressing experience of his illness.

The matter was explained to him at length in language suited to his understanding, that he was suffering from the reproduction of an experience through which he had actually lived, and from which he had suffered, but that one element at least—the malaria—no longer being present there was no reason why the distress occasioned by the combination of sun and fever should persist. He went away with this explanation and nothing more in the way of treatment.

Although the attempt was made to learn of the outcome of his difficulty, it was not possible to have another interview with him for the space of three years. He then made the following statement. He had thought the explanation given him reasonable, but for a time, although he was helped, he was still annoyed by the sun. He, however, met the difficulty in a much more philosophic spirit and had been distinctly benefited by the explanation given him of the genesis of his fear. He had continued his work as fireman, and after about three months of effort, following a short vacation, he had improved rapidly. He said that he was not "bothered a bit by the sun," except on very rare occasions, when he had a certain slight recurrence of his old feelings. He was in no way incapacitated for his work and has continued in the arduous position of a fireman.

This case is of interest for several reasons. The patient was a man of decidedly non-neurotic type, his work was arduous and demanded peculiar qualities of mental stability. He had had no preceding nervous disturbances so far as he was aware. The neurosis for which he sought relief was of the anxiety type, as I interpret that term. He was entirely relieved by an incomplete but, to my mind, adequate psychoanalysis occupying not more than two hours. If, for the moment, it be admitted that this man is well, as he certainly appears to be, the query forthwith presents itself,

Was the fear of the sun from which he primarily suffered and which was rapidly sapping his usefulness, a manifestation of an integral defect in his mental organization, the expression of an unfulfilled wish based on a suppressed emotion dating from childhood, or was it merely an excrescence, as it were, grafted on an otherwise normal nervous system in the form of a morbid association, as described many years ago by Prince? I see no possible reason in such a case for going back of what seems a sufficient explanation as demonstrated by complete relief, to the assumption of causative conditions lying far back in the early life of the individual.¹ Various phobias developed somewhat quickly, e.g., fear of crowds and of closed places, all, however, subordinated to the one extreme fear of the rays of the sun. This latter anxiety came on in attacks whenever he became conscious of the sun's rays on his body, irrespective of the general temperature. These attacks were sudden in onset, associated with a feeling of excessive prostration and extreme apprehensiveness, what I have been accustomed to regard as typical "Angst Zustände." Until he could get relief by escaping from the sun, his prostration was such that he considered himself wholly unfitted for his work, his greatest dread being that he should be overcome by such a fear while at a fire.

In this case, which I take merely as a sample of many others, I made no attempt whatever to go beyond what seemed to me an obvious explanation of his difficulty. I made no inquiry as to his sexual life, or as to his social relations in general, for the reason that it did not seem to me necessary. I saw him only once. He was free from his neurosis three years later. What this type of case seems to teach is that what I venture to call a modified psychoanalysis is often entirely sufficient to elucidate and overcome a neurosis of the anxiety type.

It should not be supposed from the foregoing remarks that any question whatever is raised regarding the neces-

¹ Donley has expressed a similar point of view. See Discussion on Pathogenesis of Morbid Anxiety, *JOURNAL OF ABNORMAL PSYCHOLOGY*, Vol. VI, June-July, 1911.

sity of a thoroughgoing psychoanalysis in selected cases, or that suppressed sexual emotions or ideas lie at the bottom of certain neurotic states. These matters have been established as facts. The universality of this conception of the neuroses is, however, far from established, and relatively few are likely to agree with the general dictum that "morbid anxiety means unsatisfied love."¹

¹ Jones, The Pathology of Morbid Anxiety, *JOURNAL OF ABNORMAL PSYCHOLOGY*, Vol. VI, June-July, 1911, p. 106.

ABSTRACTS

THE PSYCHOPATHOLOGY OF APRAXIA. *Isador H. Coriat.*
American Journal of Psychology. Jan., 1911. Pp. LXV-LXXXV.

It is only under special and favorable circumstances, either of experiment or of disease, that certain complex psychic or motor disturbances can be traced to an exact cerebral localization: The most interesting and at the same time the most complicated of these disturbances seem to be localized in some portion of the left hemisphere, particularly those conditions in which there seems to be a loss of the various types of speech images (aphasia) or a loss of the motor memories of the limb movements for a definite act or purpose (motor apraxia). According to recent researches, the left hemisphere seems to preponderate in certain requested or spontaneous movements of the limbs in the same manner that it preponderates in speech. For instance, in many lesions of the left hemisphere in which the right arm and leg are paralyzed, there may result a motor apraxia of the non-paralyzed left arm, thus indicating the existence of a special action of the motor centers of the left side of the brain. It seems likely that these various complex phenomena are really disorders of associative memory, either for identification or motility. There are not only different types of these disturbances, but also different varieties of the same type, from the simplest to the most complex.

Apraxia was a term formerly applied to the intellectual non-recognition of objects, but more recent investigations have shown that the term had best be limited to certain disorders of voluntary acts and movements. The chief disturbance in motor apraxia is an inability to make movements for the purpose demanded by the will, although the subject may understand commands and the use of objects, memory and attention may be normal and the limbs may be free from paralysis, ataxia, or tremor. Leipmann's case of unilateral apraxia which has become classical and which was studied clinically and anatomically in a most thorough manner has formed the basis of modern conceptions of the disorder. Previous to this work the ideas concerning the nature of apraxia were in a very unsatisfactory condition. In its broadest sense, reasoning from the available data of our clinical analyses, it can now be stated that apraxia in general is motor perplexity plus a disorder of identification, the latter synonymous with what was formerly termed asymboly. Apraxia may be divided into the motor and idea-

tional types. In motor apraxia the limbs do not obey the psychical wish; there is pure motor perplexity. The motor memories or movements of the limbs may be preserved but these memories are isolated or insufficiently connected with other portions of the cortex. In motor apraxia there is a defect in the use of objects, although the objects may be perfectly recognized. The subject merely fumbles with objects, being unable to translate a subjective purpose into an objective action. In ideational apraxia or agnosia the subject misuses objects because there is a disturbance of identification. The term apraxia should be limited to certain motor disorders, it being best to refer to the ideational disturbances as agnosia. Apraxia may also occur as a disorder of consciousness in delirium and in post-epileptic states. Here it is a disorder of identification and tends to disappear as the mental state improves.

Motor apraxia has also been known to occur in connection with aphasia. The disorders of movement which one frequently finds in aphasia, are very likely not due to any intellectual defect but to a disorder independent of aphasia namely, apraxia, particularly so as the apraxic disturbance is usually limited to one side of the body. Many striking points of similarity exist between motor aphasia and motor apraxia. The center for motor speech is located in the left hemisphere and the kinetic memories for co-ordinated movements likewise preponderate in the left hemisphere.

A point of significance in the majority of apraxic cases, where it was possible to make an anatomical examination of the brain was an involvement of some portion of the corpus callosum. A lesion of the corpus callosum alone causes a left-sided motor apraxia without paralysis or apraxia on the right. Under these conditions the apraxia is due either to a loss of the guiding influence of the right hand center over the left hand, or to an isolation of the hand center from the rest of the left hemisphere. A lesion in Broca's convolution producing a motor aphasia would, if of sufficient size and extent to catch the anterior radiations of the corpus callosum, likewise cause a left-sided motor apraxia.

The psychical condition of apraxic subjects presents greater difficulty of analysis than the various type of aphasia. Motor apraxia is rarely bilateral while ideational apraxia or agnosias is almost invariably so. This latter form is frequently found in diffuse brain disorders, delirious states, and in motility psychoses.

In motor apraxia the limbs do not obey the psychical wish, although that wish and the motor image of the willed movement may be clearly present in the mind of the subject. It is this inability to transfer the psychical wish into a specified movement of the limb which causes motor apraxia. In ataxia it is the ele-

mentary factors of the movements which are at fault, while in apraxia there exists a disharmony between the purpose of the movement and the idea of the object with which the purpose is carried out. The isolation of the kinæsthetic memories in apraxia is probably due to an isolation of a certain portion of the left hemisphere in which these memories are stored up, probably due to a rupture in the conduction of the fibres of the corpus callosum. This is pure motor apraxia, and when in addition there exists a disorder of identification we have motor apraxia plus asymboly, which means ideational apraxia.

The behavior of apraxic patients is very interesting. There may occur movements of substitution, curtailed, formless or short circuited reactions, and the various types of perseveration. These are described and made clear by a graphic analysis and a schematic figure.

A study of two cases of motor apraxia is then taken up and minutely analyzed. In the first case the apraxia was left-sided and appeared after the disappearance of a slight paralysis of the left arm and leg. In the second case the apraxia appeared in the left arm and followed a transitory aphasic disturbance demonstrating that a brain lesion may be so situated as to cause at the same time an aphasia and a left-sided apraxia. This is clearly shown in a figure demonstrating a diagrammatic horizontal section of the brain. For the detailed tests of the apraxic disturbances the original paper should be consulted.

AUTHOR'S ABSTRACT.

PSYCHOANALYSIS AND EDUCATION. *Ernest Jones, M.D.*, *Journal of Educational Psychology*, Vol. I, No. 9, November, 1910, pp. 497-520.

THIS article in the valuable and promising new periodical named above has much in it of suggestive value to every teacher and parent of children and of adolescents. Just such discussions, made somewhat more concrete and practical, perhaps, are much needed, even at the present day of rapid advancement in modern pedagogy, to stir the great mass of teachers and to urge them faster along modern trends of truly individual instruction.

As is frankly stated, the essay is largely negative in character rather than positive, pointing out "the nature and harmful effects of faulty education" rather than the methods of developing various capacities and functions. Dr. Jones, as is well recognized, is a consistent disciple of Professor Freud, and therefore

in no degree underestimates, as is wise, the sexual factor in personal evolution. The article accordingly deals largely with this phase of psychoanalysis — as apparently most such reviews of Freud's work continue, needlessly enough, to do. The first eight pages summarize aspects of this work, which in turn Jones summarizes thus: "Mental life should be regarded in a dynamic way, as a stream of desires and interests that tend to seek gratification. New desires and interests are not independent occurrences, but largely depend for their intensity, or even their existence, on older trends. The direction taken by the oldest of these, namely those of early childhood life, is of predominant importance for the whole future of the individual. The driving forces of mental life, therefore, are ultimately derived from the primary instincts, and can never be independent of them. It follows that satisfactory mental functioning is best attained by inducing a harmony between the different components of the mind. [Hear Aristotle Platonize!] Many of these, particularly early in life, are of such a kind as to be unacceptable to the standards of modern civilization, and have to be suppressed, or, rather, transformed into others of greater social value. In this process some become 'repressed,' and are driven into the unconscious; they, however, retain their power for good or evil, and the latter is often only lost when they are again made conscious, as in the psychoanalytic method of treatment. Stress must be laid on the facts that repression is a delicate process which under certain circumstances may bring with it grave consequences to the individual, and that filial piety, if carried to excess, is also not without seriously detrimental results." It were not easy to exaggerate the importance of this point of view for education; if school boards really understood it believingly, the primary teachers would rank as high (and draw as large salaries) as those in the secondary grades, for their wisdom surely needs be at least as great.

The article next proceeds to draw two lessons from these Freudian considerations. The first: "In order to obtain the best results it is necessary to make education a more individual matter than it is at present," to the end of "drawing out his special potentialities" and of "weaning the child to social interests." The second lesson to be drawn, says Jones, is that "it is desirable that education should concern itself more than hitherto with what may be called the human side of the child, and not exclusively with the intellectual," in the school as well as in the home. The reviewer believes that this is the very crux of our present public school system's weakness, still, notwithstanding the strong humanistic tendencies of the day,—as if the intellect were not a

curse rather than a benefit in a mind with undeveloped feelings and untrained will!

But the particular phase of Dr. Jones's "second lesson" to which he draws attention relates to the evils of sexual ignorance in children, so often discussed of late by many learned and competent pens. This portion of the paper needs no review, for the readers of the JOURNAL, some of them, at least, are already familiar with many of its important arguments and impressive facts. The gist of the matter is that the mother must very early prepare her child's mind for sexual impressions and that the teacher and the physician must supplement and extend the information,—as indeed no one nowadays, save the old-time prudes who still control most of our schools, would venture rashly to deny. The paper deals, itself admits, "only with the fringe of a large subject," and considers only "some of the more urgent and elementary questions." But it does well what it does, and were it more concrete somewhat in its relations and applications to actual school conditions, would be a still better and more useful contribution than it is to educational literature in the urgent demands of our day. Where Dr. Jones has left off let the practical teachers begin!

GEORGE V. N. DEARBORN.

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THE DIAGNOSTIC AND PROGNOSTIC VALUE OF MEMORY TESTS.
Ranschburg. (Die diagnostische und prognostische Verwerthbarkeit von Gedächtnismessungen) Klinik f. psychische u. nervöse Krankheiten. Bd. v. 1910. S. 89-194.

The present article constitutes a portion of the extensive experimental investigation into the memory functions which has occupied Dr. Ranschburg for more than ten years. Papers published from time to time have afforded some indication of the progress made in this monumental undertaking. The article now under review, which occupies one hundred and six pages, is the third part of a research devoted to the measurement of the memory functions in certain mental diseases, and deals more particularly with the diagnostic and prognostic value to be attributed to such measurement.

The method employed consists in certain tests designed to measure the patient's capacity to retain and reproduce pairs of associated words, for example, "hand — finger," "stream —

bank." Several lists of such pairs were read to the patient, and at the completion of each list the first words of the pairs were again read out, and the patient was required to supply the associated word. After twenty-four hours this latter process was repeated. The reproduction times, and the number of correct and incorrect answers given, were recorded on both occasions. The patients tested were divided into groups according to the variety of mental diseases present, and the upper and lower limits of variation of the values recorded were determined for each group.

The groups dealt with in the present research comprise congenital mental defects of various grades, general paralysis, neurasthenia, alcoholic psychoses, and paranoia. The number of cases belonging to the last two varieties are, however, regarded by the author as insufficient to afford an adequate picture of the memory functions in the diseases in question, and are given merely to contrast with the results obtained in general paralysis.

Dr. Ranschburg claims to have established the following conclusions:

(a) Measurement of the word memory in normals yields results which are sufficiently constant, and free from chance disturbances in the hands of practised observers.

(b) Normal values can be established, together with upper and lower limits of deviation for various ages and standards of education.

(c) These normal values are practically employable and useful for the estimation of memory defects occurring in various diseases, and similar values established for each of these diseases enables a given case to be assigned to one or other group with a fair degree of probability. Thus by means of these tests help can be obtained in the differentiation of pathological mental defect from normal limited intelligence, and in the diagnosis of neurasthenia, general paralysis, and other conditions.

(d) Like all other methods of diagnosis, measurement of the memory functions employed by itself is untrustworthy. It must only be regarded as a valuable supplement to the other diagnostic procedures available.

The results serving to establish these conclusions and the reactions characteristic of the various types of mental disease are described at great length and in considerable detail.

It is questionable to what extent the tests employed can be said to measure any specific function of memory. Ranschburg himself points out that they furnish a picture rather of the general intellectual capacity of the individual, and a measure of "attention, comprehension, span of consciousness, retention, recognition,

and of the quality and rapidity of the thought processes." Recent researches by other observers tend to show that the memory defects in general paralysis and other diseases are not specific, but are correlated with similar defects in other functions, and dependent upon a general mental failure.

BERNARD HART.

THE THERAPEUTIC EFFECT OF SUGGESTION. *Ernest Jones. Journ. f. Psychol. u. Neur. Band XVII (Ergänzungsheft) S. 427-431.*

IN this article Jones ably challenges the idle criticism so often launched by the uninformed against psychoanalysis, that the method owes whatever therapeutic virtue it may possess to precisely the same psychological mechanism as constitutes the essential curative factor involved in other forms of psychotherapy, namely suggestion.

The author very justly ascribes this popular error to the widespread misapprehension of the essential significance of psychoanalysis — to the persistent failure to appreciate the central idea around which Freud's whole system of psychotherapy is built.

This misconception has two sources. The first, which is the more general, consists in a lack of acquaintance with the principle or set of principles embodied in the system of logically correlated conceptions on which the psychoanalytic method is based. One is frankly unfamiliar with these basic principles, and hence lacks a realization of the inherent idea underlying them.

This sort of misinterpretation is readily explained. It too often comes from an easy willingness to accept opinions from the fallacious source of current hearsay. It is truly extraordinary what psychoanalysis is made answerable for in this way. Or perhaps one forms his opinion from a perusal of chapters here and there in the literature of the subject. But a knowledge of psychoanalysis is not to be had through such a recourse. A desultory acquaintance is necessarily a superficial and an erroneous one. It would be as reasonable to expect the layman, reading at random So-and So's "System," to acquire an adequate conception of the principles of medicine. The casual reader lacks the suitable preparation for reading the literature of psychoanalysis discriminately. Not being grounded in the rudiments, he lacks, as just said, a clear conception of the organized group of principles compassed by the theory of psychoanalysis.

But this is, after all, only the negative phase of the misapprehension under which psychoanalysis labors. Its positive aspect is more pernicious still. For here one cherishes the definite concept of a therapeutic method of procedure which he unwittingly *confuses* with the method of Freud. The method is distinguished, let us say, for the instance is typical, by its systematic inquiry into the patient's sexual life, it being the routine of the procedure to pose certain questions along this tack. Now then the advocates of such a procedure, being beset with the belief that an inquiry into a patient's sexual life is of the essence of psychoanalysis, fondly assume that this questionnaire routine, dealing as it does with the patient's sexuality, is *de facto* psychoanalysis! In point of fact nothing could be wider of the truth. The principle of such a psychotherapeutic procedure has not in truth the remotest affinity with the psychological conceptions underlying the theory of Freud's method.

Of course to criticism based on so gross a misapprehension there is no limit to be set. If one does not know what psychoanalysis is, or if he thinks it to be that which it is not, he may berate the method without end with false ascriptions. But to criticize a system as being the exponent of a procedure of which its very essence is a repudiation is to trespass egregiously the canons of logic, to say nothing of the conventions of debate. Certainly science will not progress far on this plan of operation.

To any one who goes to the pains to acquaint himself with the psychological foundations of Freud's method it will inevitably become clear that not only is the ultimate effect wrought in psychoanalysis not due to suggestion, but that *it is due precisely to the abrogation of suggestion*. He will see that the psychological mechanism inherent in suggestive therapeutics is the exact antithesis of that envisaged in the method of psychoanalysis.

That psychotherapists who cure their patients through what they *apprehend* to be psychoanalysis are as a matter of fact effecting a cure through out-and-out suggestion is undoubtedly true; but to say that psychoanalysis is susceptible of gross misconception and of appalling technical blunders in no way incriminates the principles of the method. For between psychoanalysis as a therapeutic procedure ruthlessly perverted through the blunders of unskilled hands and psychoanalysis as a conceptual postulate the gap is a wide one.

Let it be repeated that psychoanalysis, properly understood, consists of nothing more nor less than the thorough elimination through the medium of consciousness of the noxious elements

of "suggestion" induced through the unconscious phantasies toward his physician that are nourished in the patient from the remote sources of his early childhood.

TRIGANT BURROW.

REVIEWS

DIE PSYCHANALYSE FREUDS. VERTEIDIGUNG UND KRITISCHE BEMERKUNGEN. By *Professor E. Bleuler (Zurich)*. (Pp. 110. Deuticke, Leipsic. M. 2.50.)

It has often been pointed out of late that what is urgently needed in criticism of Freud's views is neither bigoted opposition nor blind acceptance, but an impartial reinvestigation of the facts on which these views are based. Certainly no one has deplored the lack of good criticism more than Freud's supporters themselves, for no one who has given time to the study of these matters can but deplore the extraordinarily poor quality of most of the criticisms that have up to the present been offered, failing as they do in scientific judgment, in understanding of the subject, or even in the first attribute of sound criticism, impartiality. In the present brochure Bleuler fills an important lack in the literature of the subject by providing a first attempt at a criticism along the desired lines. He deals first with the objections brought by other writers, then states his own points of difference from the Freudian position, and lastly attempts the task of bringing Freud's views so far as possible into line with well-accepted psychological principles.

The first, and longest, section is taken up with a detailed consideration of previous criticisms. In the first place he shows by the use of numerous quotations such as "monstrous suppositions — abject nonsense — dogmatic sect — disgusting monomania," etc., that a great number of these are dictated by intense feelings of prejudice rather than by any desire to reach the truth, and pithily says, "He who cannot endure the truth should keep away from science." Those who think it wrong to investigate the sexual aspects of neurotic patients have the alternative of studying either the normal or insane patients; if they object to this as well, then they have no right to any opinion as to the truth of the conclusions in question. In reply to Alt's objection that Freud's views on the sexual origin of the neuroses "hangs a sword over the poor hysteric," Bleuler remarks that in the same way it might be said that the luetic theory of parasymphilia "hangs a sword over the poor tabetic," and points out further that, according to Freud, it is not so much the mere existence of sexuality that is the operative factor in hysteria as the over-moral repression of it.

He finds it equally easy to convict many critics of complete ignorance of the views they imagine themselves to be criticizing, and rather indignantly protests against Friedländer's citing such

critics as competent authorities on the subject. The following two examples may be quoted of this. Weygandt rejects Freud's wish-fulfilment theory of dreams because often in dreams unpleasant ideas occur that are not overcome; Bleuler remarks to this, "has he really not read how Freud deals with this universally known fact?" Trömmner disputes the sexual aetiology of hysteria "because hysterics are mostly frigid in this respect," although Freud has shown that such frigidity means excessive repression, not the absence of sexuality. Another observer remarked, in reference to a case of "neurasthenia," that a sexual aetiology could be excluded because the man was impotent, though it is hard to see how such a patient could be regarded as sexually normal. One writer says that Freud's expression "flight into disease" is too deep to be understood except by a "member of the sect," but Bleuler points out that the idea was known long before Freud, and quotes Sokolowski's phrase for it, "disease is the lightning-conductor for despair."

Much of the opposition to Freud arises from his conception of the extensive part played by matters of sex, but Bleuler thinks that "the present kind of sexual repression and hypocrisy is utterly reprehensible from both an ethical and hygienic point of view." As to the part these matters play in certain disorders he considers that it is clearly demonstrable, or at least "better than ninety per cent of the various theories accepted elsewhere in medicine." Those who deny this should bring examples "in which just as clear and defined, affective and logical, connections exist between the symptoms and *other* complexes." To begin with, both Bleuler and Jung disbelieved in the purely sexual nature of the aetiology, so that if they had failed in their attempts to guard against suggestion their experience should have led them more and more away from this aetiology; the contrary, however, was the case. Out of hundreds of cases of dementia praecox that they analyzed there was not one that did not have pathogenic sexual complexes; with most of the patients this was the only kind, and in only a few cases were other complexes more prominent. No one who knows this type of patient can maintain that it is possible to suggest such thoughts to them, at all events often. Bleuler gives as an instance of such experiences the case of a catatonic who had the habit of wetting her bed. When asked about it she awoke from her torpidity, became excited, gesticulated, and laughed; with a gross erotic smile she explained that she did it whenever she dreamed that the doctor was with her. Bleuler remarks that there is no proof that the patient really dreamed, but when one has heard the same thing told by hundreds of patients one can no longer doubt its existence.

Similarly in regard to the Oedipus complex, which critics dismiss with merely a contemptuous note of exclamation; "However, the complex exists in spite of this strict scientific disproof, . . . What evidence is a note of exclamation against hundreds of cases?" As to the existence of infantile sexuality, "one must be simply blind to the facts of every-day life not to see it."

Bleuler discusses at great length the important question of the validity of psycho-analytic interpretations, concerning which critics evince so much doubt. He devotes five pages to a single example, the much-criticized "aliquis" interpretation of Freud's, the probability of which he maintains to be overwhelming. He gives numerous instances of how the interpretations lend themselves to objective verification, and remarks that one cannot always disbelieve a patient's statements merely because they are made during psycho-analysis; because occasionally a patient lies when he says he has a headache we cannot refuse to believe that headaches occur. With regard to symbolism he sums up as follows: "1. The most different points of support often give the same interpretation. The mimic, the associations, the stereotyped movements, the logical and affective connections, the dreams, delusions, and hallucinations of the patient all point to the same conclusion. 2. Different observers come to identical conclusions with the same patient. 3. The laws and points of view find application in the most different cases and under the most different circumstances, but only with similar phenomena: while organic and alcoholic diseases as well as manic-depressive insanity display Freudian mechanisms only in accessory symptoms, these are found in the dreams and reveries of the normal, in the symptomatology of the neuroses and dementia praecox, in myths (as was pointed out long before Freud) and in poetry. 4. The psychological discussion to follow later will show that the Freudian mechanisms are not peculiar, but that the conditions for them are everywhere operative in the mind, so that one can practically foretell from a knowledge of the normal mind that such things *must* occur." He lays stress on the vast extent of facts that become intelligible through the Freudian mechanisms, and rightly adds, "The more disparate the occurrences a hypothesis explains, the fewer matters relating to it leaves unexplained, so much greater is its value to truth. . . . With the Freudian theories on symbolism one has not up to the present come across any gaps or contradictions that would speak against the applicability of the principles." As to the supposition that one can arbitrarily interpret anything in any direction one likes, Bleuler shows that this is more easily said than done. From the many instances he gives, the following one may be quoted: he

got a friend to put together a story from words taken by sticking a needle into a dictionary at random, and then related the whole as a dream of his; the colleague who undertook the analysis in good faith was totally unable to piece together any logical connection out of the associations supplied by the analysis. Freud's conclusions are not guesses in the air, but are derived from carefully observed facts; indeed, so empiric is his attitude that his inability to get away from the facts has prevented him up to the present from formulating any complete theory of his work, and has only allowed him to offer step-like conclusions from his immediate observations.

It will be seen that Bleuler has convinced himself of the truth of Freud's chief conclusions, but he by no means follows Freud throughout, and he next proceeds to state wherein he differs from him. Before doing so, however, he explains his difference, in that, to quote again his own words, "I recognize only too well the weight of the consideration that up to the present, so far as I have been able to test his conclusions, Freud has always proved to be right, even when it has been a question of matters that at first sight seemed to me to be improbable or even absurd. I do not at all mean, therefore, that Freud is in the wrong in the points where I am tentatively of another opinion, but only that I consider his conclusion has yet to be proved. I wish also expressly to say that many of my (critical) remarks concern certain of his followers rather than Freud himself." Bleuler first protests against some of the pathographies that have been written, particularly by Sadger on various poets. He thinks it unwise that such writings should be addressed to the general public in the present state of our knowledge. Then with regard to various interpretations he warns against the tendency to over-generalize, very properly pointing out that however common a given interpretation may be it is probable that there are always exceptions to it. He also deprecates certain ways of presenting the subject, particularly the custom of brusquely relating the interpretation of a given dream or symbolism, without detailing the evidence for the conclusion in question (he here is evidently thinking of some of Stekel's writings, though he does not mention him by name); such methods inevitably lead to misunderstandings on the part of the reader who is not acquainted with the subject.

As to Freud's views themselves Bleuler has the following to say. He feels that he does not fully understand Freud's statement to the effect that unconscious thought-processes are no other than those dating from childhood life. He finds that mental processes of later date may also become unconscious, though he agrees with Freud in the essential point that these are associated

with the earlier ones of infantile origin. (The explanation is that Freud is referring here to the unconscious in its narrow sense, i.e., its deeper layers; the mental processes acquired later are more superficial.) He also does not see why the unconscious cannot fear as well as wish. He does not believe that by means of psycho-analysis one can separate different neuroses, but only different syndromes, though he admits that he has had no personal experience with these conditions. With regard to the exclusively sexual aetiology of the neuroses he points out that it is theoretically possible that a non-sexual congenital predisposition may occur of such a kind as to render the person more vulnerable to later sexual disturbances. Then as to the question of non-sexual activities being derived from sexual tendencies (sublimation), his position is not quite the same as that of Freud's. Both believe in the capacity of the sexual instinct to contribute energy to other activities, which thus in a way replace the latter, and both believe that, in many cases at least, these other activities have an independent origin, but Bleuler goes further than Freud in the extent to which he recognizes these independent origins. For instance, he does not believe that the craving for knowledge, the love of the æsthetic, and religious desires and beliefs originate *exclusively* in the sexual instinct, though he admits that this is an important source of them. It is in respect to the many problems of dream life, however, that he mostly differs from Freud. He accepts the validity of the Freudian mechanisms and conclusions, but not their universal validity. Freud's conception of an endopsychic censor seems to him too sharp, and he would prefer to replace it by the more general one of "inhibitions due to opposing affective needs." He does not believe that the function of dreams is to guard sleep, nor that the state of sleep makes possible the dream-formation by lowering the activity of the censor. (To the reviewer this seems a reasonable supposition, however, in view of the fact that the censor is a function of consciousness, or at least of the fore-conscious; indeed, it would be surprising if it were not the case, since all other functions of consciousness are diminished in activity during sleep.) In concluding his remarks on the subject of dreams, he adds, "I wish expressly to characterize these scruples as tentative; I mention them to show that I am not blind to lacunas, and nevertheless hold the dream interpretation in its essentials to be one of the most certain gains of the deeper psychology."

The third section of the volume is, in the reviewer's opinion, the most valuable, for it deals in an admirable manner with a topic that has been too long neglected, namely, the effort to harmonize Freud's conclusions with those reached by other routes. Bleuler

deals with such questions as other evidences of unconscious activities, other instances of the mechanisms of identification, condensation, displacement of affect, abreaction, and the process of overdetermination, other indications of the significance of morbid anxiety and compulsion (Zwang), and so on. He illustrates all these matters with a rich series of examples taken from daily life as well as from various writers, and expounds them with remarkable lucidity. More important still, perhaps, is his penetrating discussion of the fundamental psychological principles involved in Freud's work. Unfortunately, this part of the volume does not lend itself to summarizing, and in any case it certainly should be read in the original.

In his concluding resumé Bleuler states that in his opinion "the essential part of the Freudian theory rests in a logical manner on assured facts, so that one has to accept it as correct. . . . The other part of the Freudian psychology is not nonsense, but disputable hypothesis, which may prove to be very fruitful. That in the minor work of the whole school many details are problematical, too hastily generalized, or directly untrue, should not appear strange. It would be curious if in this freshly explored field and in the endless complication of the mind false conclusions were not reached as well as in every other sphere."

From a man of Professor Bleuler's authoritative standing in psychiatry, and from a man who has spent as many years as he has in the study of this particular branch of the subject, this criticism must carry especial weight. Additional value, and one might say charm, is obtained by the equanimity and moderation of its style, which might with advantage be taken as a model by many overheated writers on both sides of the controversy. To those who are desirous of attaining an impartial decision on an involved subject, and of removing various misconceptions that are bound to arise when one's acquaintance with it is imperfect, to those, in short, who prefer the investigation of truth to merely proving themselves right or others wrong, this volume can be warmly recommended.

ERNEST JONES.

THE FUNCTION OF SLEEP (*La Function du Sommeil*). By Albert Salmon. Paris, 1910. Pp. 235.

In this monograph, Salmon returns to his theory of the relation between sleep and the function of the pituitary body, which he had originally promulgated in 1905. He starts with an account of the mechanism of plants by which they close their leaves

and petals in darkness, and open them either in natural or in artificial light. This he considers sleep, a view which appears to us to be erroneous, since plants do not possess a nervous system, and therefore literally cannot be said to sleep. This opening and closing of leaves and petals in plants is probably a mere chemical mechanism, allied to a tropism and not sleep at all. Our daily sleep is a biochemical phenomenon, whose function is the nutrition of the central nerve elements, and consequently those tissues which depend upon the activity of the nervous system rest likewise during sleep. Sleep is therefore really a biological reaction of defence against starvation. In the loss of coenesthetic sensations which precede sleep there is a diminution of muscular tonus, and in sleep itself we give to the body its least muscular effort. In the semi-drowsy states there is also some loss of muscular tonus, but here it is not complete. In this semi-drowsy state, also, hallucinations very frequently arise, due, undoubtedly, to the activity of the peripheral sensory neurones. He then discusses the conditions which resemble sleep, such as stupor, hypnosis, electrical sleep, conditions of muscular inhibition in animals and narcosis.

The primary psychic condition for sleep he believes with Claparede to be disinterest and inattention. On the contrary, some conditions, such as hypnosis, may outwardly resemble sleep yet are not identical with it. For instance, ordinary stimuli if sufficiently strong will awaken a sleeper, but not a hypnotized subject. Hypnosis, as a rule, is rapidly induced and does not assume the characteristic course of sleep. In sleep there is a certain degree of muscular tonus. The inhibition of muscular movements in animals, when they are suddenly placed in an abnormal position, is not due to fright, because there is no loss of sphincteric control and no symptoms of fear except a slight tremor of the rigid limbs. Sleep is a negative state, a cessation of brain activity, an instinct. This instinct consists of a periodic relaxation of muscular tonus, which becomes automatic by habit. Lack of interest and diminished attention cause sleep, because these are unaccompanied by muscular tonus. When we sleep we take the position in which there is the least muscular tension.

All secretions are regulated by psychic stimuli, particularly the salivary, gastric, and pancreatic juice as shown by Pawlow. The desire to sleep is brought on by a gland or secretory apparatus, which has a periodic activity. The principal factor in sleep as in secretions is the periodicity. Both depend on habit and psychic stimuli. The various points of analogy between sleep and the function of secretion is one of the strongest arguments for the secretory

theory of sleep. The prime motive in sleep as in secretion is psychic,—the desire to sleep. The sensation or the desire for sleep is called the appetite for sleep, analogous to normal appetite and hunger. Both the appetite for sleep and for food are rythmic mechanisms. Through habit we can change the hour for hunger as well as of sleep, and therefore both are due to psychic stimuli. The need of sleeping and of eating are organic needs, and the curve of the gastric secretion bears a striking analogy to the curve of the depth of sleep. Both are more intense during the first or second hour, and then gradually descend and both are increased or diminished by the same circumstances, such as sea air, excessive fatigue, cold, etc. Drugs which diminish gastric secretion, such as atropine, cause insomnia, those which increase it, such as alcohol, produce drowsiness.

Disorders of sleep are very frequent in those diseases which interfere with the internal secretion. For instance, the drowsiness of myxedema, which is due to a diminished secretion of the thyroid gland, diminishes under thyroid treatment, while in goitre, in which there is an increased secretion of the gland, insomnia is frequent. Somnolence also occurs in adiposity, which condition, according to modern researches, may be due to an alteration in the secretion of hypophysis. Somnolence also occurs in diabetes, a disorder of glycogenic secretion, and it is interesting to note, that in hypophyseal tumors, with or without acromegaly, there is frequently associated a glycosuria.

The very marked relation pointed out between disorders of sleep and hypophyseal tumors, forms one of the most interesting and important parts of the book. Somnolence or even prolonged sleep or stupor are very frequent in hypophyseal tumors. In most pituitary tumors of any lobe, there is either a prolonged state resembling sleep or frequent attacks of drowsiness if there is a hypersecretion, or insomnia, if a diminished secretion. He also points out that excluding pressure symptoms, somnolence is very rare in brain tumors unless they invade the hypophysis or press upon it, and thus interfere with its secretion. In the histology of the gland there are not only secretory cells, but also bipolar nerve cells. Somnolence has also been reported in hypophyseal tumors, where the tumor was too small to exert pressure or interfere with cerebral circulation, and therefore the sleepy attacks occurring in hypophyseal tumors cannot be due to either of these two factors. Therefore, in these hypophyseal tumors, the somnolence must be due to some change in interference with the internal secretion of the gland, and not to mere mechanical pressure, because the somnolence only occurs in tumors which interfere with the glandular

cells and not with the bipolar nerve cells. Sometimes in pituitary tumors (hypersecretion) insomnia takes place, and these insomnias have been known to yield to the administration of pituitary extract. These insomnias may take place in pituitary tumors in spite of marked pressure symptoms, a proof that somnolence under like conditions cannot be due to pressure. Insomnia is most likely to take place if there is hyposecretion, while somnolence occurs where the gland is over active (hypersecretion).

He then goes on and points out the analogy between the winter sleep of animals and our daily sleep. The winter sleep of animals is also due to diminished secretory activity of the tissues, or to a special tissue which he terms "*la glande hibernale*," an important organ which is found almost exclusively among hibernating animals. This gland is located near the thymus, and is small in summer when the animal is active, grows larger and becomes very vascular at the approach of lethargy, while during sleep, it gradually diminishes with the exhaustion of the activity of the gland. Awakening takes place with an increase in the activity of the gland.

According to this secretory theory of sleep,—"sleep is a vegetative function, a function of secretion, intimately related to the functional activity of certain special organs of internal secretion. Deep sleep is an absolute repose of the brain, in which there follows a slowing of the metabolic process of the entire body." It is the nerve cell which furnishes the key to sleep. The nerve cell, particularly by means of its Nissl bodies, nucleus and neurofibrils, has an important secretory function, characterized by an elaboration of the chromatic substance. This chromatic substance accumulates during repose and disappears during activity, particularly under conditions of fatigue. It is logical to infer, therefore, that during sleep there ought to be a large accumulation of this chromatic substance in the nerve cell. By means of the Nissl method, he examined the brains of chickens which he suddenly killed during sleep, and he found that the cortical nerve cells showed a marked affinity for basic dyes, due, he thinks, to an increase of the chromatophilic elements in the protoplasm. In the experiments of others it was also shown that there was an increase of the chromatic elements in the cells of the spinal ganglia during sleep and a diminution during activity. Therefore the condition most favorable to an accumulation of the chromatic substance is a state of repose of the nerve cell, exactly the condition which is found in sleep. As the chromatic substance accumulates in the nerve cells during this functional inactivity, so sleep is most easily obtained in a state of functional repose, when the sensory stimuli

which bring the nerve cells into activity are most feeble, that is, disinterest for the present situation, and therefore repose of the psychical centers. The chemical modification which makes the nerve cell lose its activity during sleep is probably a process of dehydration and therefore a decrease in its electric conductivity. The waking from sleep is due to an increase of esmotic pressure, and therefore hydration. This chromatic material is colloidal in nature and colloids are the physical basis of living matter. This accumulation of chromatic elements in the nerve cell forms an obstacle for the transmission of psychic stimuli. There follows consequently a loss of attention, then unconsciousness, then sleep, which is a negative state, a cessation of nerve function. Sleep, which bears remarkable analogy to the hibernial lethargy of animals, is also dependent upon an organ of internal secretion. The hypophysis is the nervous center for sleep, but is not a specific organ of sleep, any more than it is a specific organ of adiposity and osteogenesis.

Sleep is essentially a mechanism for the repair of the neural elements, which cease their activity during sleep. Waking activity is the cause of sleep in the same way that starvation and abstinence from food prepare the way for the digestive function. In sleep the chromatic substance increases, and this increase produces a diminution of the osmotic pressure of the nerve cells. Then the formation of the chromatic substance gradually decreases, finally reaching a point where it permits the passage of psychic stimuli. Thus a preparation is made for awakening and sleep ceases when this activity is exhausted.

In discussing the origin of sleep, he points out that sleep is necessary for the preservation of the organism, because waking activity if prolonged would have a necessarily fatal effect. According to Salmon, sleep is a defence of the organism against intoxication, and has, therefore, a positive, reparative action upon the nerve centers. The best explanation of sleep is therefore biochemical, which considers sleep, not a vegetive passive state, but a positive condition, a function.

I. H. CORIAT.

PHYSIOLOGY OF THE SPECIAL SENSES. *By M. Greenwood, Jr., London. Edward Arnold. 1910. Pp. vi, 239.*

THE book before me purports to be of aid to the psychologist and also to a general class of readers who would like to know something about the special physiology of the sense organs. I shall consider it only from the psychological side.

In these days of scientific specialization we like to see consistency and clearness in book writing. If a book is to be physiology let it be physiology and that alone, and not some "milk and water" psychology mixed in with it. In the first chapter we are confronted by a discussion of Weber's Law and Muller's theory about Specific Nerve Energies. (The author calls it Muller's Law.) If such topics were worth discussing at all they were worth discussing well, which has not been done. One would not expect it from a physiologist, and hence they had been better omitted. This is especially true of Weber's Law which has to do with sensation and its measurement. Psychologists on this side will get nothing here. Compare it with even the discussions in general text-books and it will be found sadly wanting. Yet this book pretends to add to our knowledge.

The summing up of classical lore in the case of cutaneous sensations and the eye is of value, but why this was not done in all cases is not evident.

Smell is fairly well done, but is much inferior to Titchener's account, either in his *Experimental Psychology* or in his *Text-book*. Again one notes that the psychologist has little to learn from Mr. Greenwood in this respect.

Even the author himself implies that the treatment of the ear is weak. It is far from being up to the moment, and much inferior to Myers, so that it is hard to see how this book can be any aid in that respect. No mention is made of later theories of hearing. E. G. Meyer and Ewald.

When we come to the eye there is some improvement because the author has here some special interest which, however, leads him astray to the extent of writing eleven chapters while there are only two on hearing. Surely this is out of proportion. Here also there is a lack of consistency, as we have a comparative discussion which is wanting in the treatment of some of the other senses. Some of the later theories which one would expect to find in a special book are missing: e.g., MacDougall's modification of the Young-Helmholtz theory, and Meisling's theory, which appeared in 1907.

It may seem impertinent to remind physiologists that when they discuss Weber's Law, sensation, space perception, consciousness, that for the time being they have ceased to be physiologists, and at the same time they appear to poor advantage as psychologists. That mistake among others has been made in this book. It is hard to see what use it can be to psychologists. Certainly not from any physiological information, because it does not add to Schaefer or Howell or Nagel, to say nothing about

McDougall or Rivers or Sherrington, to which we look for detailed and accurate information on physiology.

One may say that this book possesses none of the characteristics of a special treatise which can be of value to the modern psychologist. To be of use it needs be more recent, more detailed, and moreover if it purports to be physiology it may dispense with much crude psychology. The method of expression is dull, labored, and clumsy, so that at times it is almost impossible to get at the meaning of some passages.

The best part of the book is that on vision, and here the author would have been of much more service if it had been published by itself or in some periodical. A book was unnecessary, as it involves much labor on the part of the writer and the reader, all to no purpose. Be it said that we are accustomed to get much good physiology from England, but this is a notable exception.

This is a very general review of a book so imperfect and lacking in the fulfilment of its purpose that a detailed consideration is unnecessary. Detailed reviews are only needed in the case of books which are faulty in the small points.

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BOOKS RECEIVED

THE ESSENTIALS OF PSYCHOLOGY. By *W. B. Pillsbury*. The Macmillan Company, New York, 1911, pp. 362. \$1.25 net.

SCIENTIFIC MENTAL HEALING. By *H. Addington Bruce*. Little, Brown & Company, Boston, 1911, pp. 258. \$1.25 net.

INCREASING HUMAN EFFICIENCY IN BUSINESS. By *Walter Dill Scott*. The Macmillan Company, New York, 1911, pp. 339. \$1.25 net.

